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AN APPRECIATION OF THE LIFE AND WORK OF WALTER REED.

By THE WALTER REED COMMISSION
of the
MEDICAL SOCIETY OF VIRGINIA.

There is no more arresting story of scientific integrity, intellectual courage, and devotion to truth in American annals than the story of the life and work of Walter Reed. This fruitful life was a short life, and forty-eight years of it were spent in preparation for three years of amazing and revolutionary productivity.

Walter Reed's ancestors were of English stock. His immediate forbears were from North Carolina. His father was a Methodist minister. His mother, Pharaba White, was a woman of gentle spirit and forceful character. The family moved early in life from their home in North Carolina into Virginia, and Walter Reed, the youngest of five children, was born in Gloucester County, Virginia, September 13, 1851. The first decade and a half of his life was spent amid the simplicities and frugalities and sincerities of a pastor's home in the countryside of the Old Dominion. Reed was thus fortunate in the stock from which he sprang, the era in which he grew to manhood, and the mood of the society which helped, in some sense, to fashion his ideals and impulses.

Between 1851 and his entrance into manhood in 1876, Virginia and the states of the south generally, triumphed over the ruin and exhaustion of war, and yet somehow clung to the older traditions of simplicity and personality. There was a fine seriousness in the air of the time, calling to youth to realize its highest self in the temper of the modern world and, if need be, to spend itself in the public welfare.

Fortunately for the young embryo scientist, the vicissitudes of a Methodist preacher's life brought the family to Charlottesville, Virginia, the seat of the University of Virginia, where, for three years, he studied in the Academic Department and the Medical School of the University, receiving his degree of Doctor of Medicine in 1868, and attaining the distinction of being the youngest student who ever graduated from the Medical School then famous, notwithstanding its shortcomings in clinical opportunities, for its didactic excellence and for the demands it made upon its students for industry and persistence, and enveloped then, as now, in an atmosphere of great traditions and lofty spirit.

The young physician spent the seven years between 1868 and 1875 in achieving a second degree in medicine at the Bellevue Hospital Medical School in New York, in interne work in various hospitals, and in service as inspector on the Brooklyn Board of Health. There existed, at that time, among young medicos, an ambition to enter the United States army service, and Reed, following this tendency, successfully passed the army examinations, and, in due time, received his Commission as Assistant Surgeon and First Lieutenant. The next eighteen years of his life is a story of intense labor at fifteen different frontier stations. Reed's strong character and his University training proved their worth during his life as a post surgeon on the western border by helping him to extract from his experience, independence, intellectual clarity, and loyalty to an ideal, which are prime essentials of a great scientist. The trivialities and dissipations of barracks life held no attractions for him. The solitude of the western plains left much opportunity for nursing his inspiration to serve humanity through some important medical discovery. The hardships and privations of his frontier life were nobly shared by his brave wife, Emilie Lawrance, of North Carolina, whom he married in 1876.

Reed utilized his residence in and near Baltimore to study bacteriology, pathology, and physiology at Johns Hopkins, then on the threshold of its great career as a teaching and research institution. Here, as Dr. Howard Kelly thinks, he came into contact with the methods of modern scientific research and laid the foundation for his future distinction. It should be remembered, too, that medicine itself was at the dawn of a new and revolutionary era and about to undergo greater development than in any other one hundred

year period in the progress of that great composite science.

It is no purpose of this brief appreciation to recite in detail Reed's various posts and assignments. In 1893, he was ordered to duty in the Surgeon General's office, in Washington, and assigned to the Curatorship of the Army Medical Museum and the professorship of bacteriology and clinical microscopy in the newly organized United States Army Medical School, the appointment carrying with it promotion to full surgeon with the rank of Major.

During the brief period between 1892 and 1902, Reed published twenty-one important papers on various medical subjects, including erysipelas, cholera, pneumonia, malaria and typhoid. During the Spanish-American War he served as Chairman of a Committee to study the causation and modes of propagation of typhoid fever, then prevalent among our troops in Cuba. On the completion of this investigation in 1899, he returned to Washington. In view of his later work on yellow fever, it is of interest to note that this investigation on typhoid fever disclosed much evidence tending to incriminate the common fly as a carrier of the typhoid infection.

This marks the end of Reed's period of preparation. He was now ready for his real work. Early in 1900, yellow fever appeared among the American troops stationed at Havana. The disease spread rapidly during the summer. In spite of the fact that Major Gorgas had made of Havana one of the most sanitary cities in the world, yellow fever struck with unprecedented severity. Reed was appointed Chairman of a Commission to investigate the cause of yellow fever. His associates were Dr. James Carroll, a bacteriologist, Dr. Jesse W. Lazear, an entomologist as well as bacteriologist, and Dr. Aristides Agramonte, a pathologist.

The Reed Commission, after a year's work, discovered the mode of transmission of yellow fever. This knowledge supplied the necessary information for the control of this pestilential disease. The organism of yellow fever is not yet known. But search for this agent is being made on the basis of Reed's fundamental experiments and results. The yellow fever organism, or virus, will undoubtedly be found, and a means will then be at hand for the treatment of yellow fever with therapeutic sera, if perchance control should be lost locally through persistence somewhere of unknown foci of infection.

Aside from the immediate value in checking yellow fever in Cuba, Reed's experiments had enormous indirect effects. They made possible the building of the Panama Canal; they saved millions of dollars by showing the futility of the previously employed destructive means of burning "infected" property; they meant safety against the peril of yellow fever to millions in Central and South America. In spite of the findings of the Reed Commission, these resulting benefits would have been impossible but for the simplicity, accuracy, and completeness of Reed's work. Had the experiments been less simple and precise, the lay and scientific world would not so quickly and almost unanimously have become convinced of the truth of the results.

Measured by the criteria of scientific finality, direct human benefit and remote economic effects, the work of Walter Reed on yellow fever stands out as one of the great medical discoveries of all time. There is inspiration for the younger generation of medical graduates in the fact that the long period of routine, apparently unproductive service in Walter Reed's life could be made to contribute the necessary preparation for an epochal scientific discovery. Speaking of Walter Reed's eighteen years of service as post surgeon, Major J. R. Kean discloses the advantages which a strong will and a trained mind could force from it: "To lesser minds the limitations of such a life must have been narrowing, but for the eager industry and professional devotion of a Reed, they made the roots strike deep; and when we are surprised at the rapid growth and splendid fruit of his career as a scientist, we must remember that in the post surgeon's unmarked life, the seed was germinated and the roots firmly set . . . During the long apprenticeship he acquired, too, that perfect familiarity with the conditions and limitations of army life, which, combined with his scientific knowledge and sound judgment, made him the best sanitary inspector in the army and the court of last resort on all sanitary questions." This experience produced, moreover, a certain mental attitude so essential for his future work. It left him, as Dr. McCaw has emphasized, "with not too much reverence for accepted teachings and too little experience in grappling with difficulties unassisted."

To appreciate fully Reed's service in the

control of yellow fever, we need to form some idea of its previous ravages. Since time immemorial, yellow fever has been a perennial spectre of almost world-wide visitation. It spread unchecked until frost set a bar. The mortality was always high, ranging from 15 to 85 per cent in different countries. No known treatment had apparently the slightest effect. Almost every means of control was tried, from the inoculation with rattlesnake poison to the wholesale burning of houses in which yellow fever patients had died.

The earliest authentic record of yellow fever is of an epidemic in Central America in 1596. In 1668 it visited New York for the first time. Subsequently epidemics occurred in Boston, in 1691 and again in 1693; Philadelphia and Charleston, S. C., were stricken in 1699. Between 1700 and 1800, yellow fever appeared, according to Keating, thirty-five times. It ranged from Florida to Massachusetts. The worst of these epidemics occurred in Philadelphia in 1793, when the death rate was one in ten of the population. New Orleans was stricken in 1853; there were 29,020 cases with 8,101 deaths. It has been estimated that one year of yellow fever cost the state of Louisiana alone 4,056 lives and $15,000,000.00. In 1855, yellow fever appeared in Norfolk; one out of three of those remaining in the city died. The epidemic of Memphis in 1878 is one of the worst on record; there were over 17,000 cases, with a mortality of one in 3.3. This same year the entire south was ravaged by this scourge, which reached as far north as Virginia. There were over 500,000 cases of yellow fever in the United States between 1793 and 1900. Keating estimates that the epidemic of 1878 cost no less than $100,000,000.00. People in general accepted yellow fever as a visitation of God, the scientific world busied itself largely with fruitless speculations, and the entire subject was enveloped with uncertainty and gloom.

About 1878, the foremost scientific opinion rested on the idea of "fomites", a term employed to designate infected bedding, clothing, or furniture, through which the disease was thought to spread. Knowledge of yellow fever remained practically stationary for twenty years until the work of the Reed Commission.

It is only just to emphasize the fact that about this time the role of insects as carriers of disease germs was receiving much attention in medical publications. Major Ronald Ross, of the British Army, and the Italian Giovanni Grassi, had succeeded about 1900 in demonstrating that a mosquito of the genus Anopheles was the host carrier of the malarial parasite. The earlier literature on the infectious or contagious diseases contained references to the supposed transmission by flies or other insects. Thus cholera, leprosy, the plague, typhoid fever, and tuberculosis had been associated by early writers with insect carriers, acting either as intermediate hosts or as objects to which the infected material was attached and so spread from place to place. Reed himself had written on the transmission of typhoid fever by flies. More to the immediate point was the insistence through a period of twenty years on the part of Dr. Carlos J. Finlay, of Havana, President of the Superior Board of Health of Cuba, that yellow fever was transmitted by a mosquito. He even implicated a certain species, Stegomyia fasciata, out of a possible 800 species of mosquitoes. But he was unable to produce the evidence which satisfied the scientific mind and warranted procedures on the basis of his claim.

On June 25, 1900, the Yellow Fever Commission arrived in Cuba and began at once to study "questions relating to the cause and prevention of yellow fever" at Quemados, a suburb of Havana. They directed their first attention to the discovery of a possible germ of yellow fever, with the hope of producing thereby curative sera. Eighteen cases from the Las Animas Hospital in Havana, some of them very severe, were most carefully investigated. Thorough and detailed autopsies were performed on four of them who died. Nothing in the nature of a germ could be discovered. This line of investigation was abandoned as without promise. The only alternative was now to begin search for the carrier of a presumably submicroscopic specific organism.

The Commission took time to consider certain queer things about the spread of yellow fever. Dr. Reed recalled certain facts in the reports of Surgeon Henry R. Carter, (a graduate in engineering of the University of Virginia), of the United States Marine Hospital Service, on the yellow fever epidemic of 1898 in Mississippi. Dr. Carter had noted that "The period from the first (infectious) case to the first group of cases infected is generally two to three weeks". These observations were confirmed by the Commission. They suggested

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an incubation period, and seemed to indicate the presence of an intermediate insect host, which having taken the germ into its body was able after a certain interval to reconvey the infectious agent to other individuals. The Commission found the interval to be from nine to sixteen days. Dr. Reed was also much impressed by the fact that nurses and orderlies in Las Animas Hospital, though forced often to handle soiled materials (fomites) did not come down with yellow fever. This again suggested some insect carrier, acting as an incubating nidus and reinfecting agent, virulent only within certain sharply limited time intervals.

The Commission then went to call on Dr. Finlay. He generously expounded his theory of mosquito transmission of yellow fever, and put all of his data before them. He even gave them eggs of the mosquito he incriminated, Stegomyia fasciata. Dr. Reed took the eggs and gave them to Dr. Lazear with the request that he develop them into mosquitoes and use them for experiments. But animal experimentation was in this case impossible, since only humans take yellow fever. Permission was received from Governor-General Leonard Wood to conduct human experiments. The Commission decided that they must be among the first to take the risk. After carefully explaining the dangers involved, Dr. Lazear secured seven volunteers. He took the female mosquitoes raised from the eggs supplied by Dr. Finlay to Las Animas Hospital and allowed them to take their fill of blood from yellow fever patients. He then allowed the presumably infected mosquitoes to bite himself and the seven volunteers. Not one got yellow fever. Dr. Lazear was discouraged. But Dr. Carroll reminded him that Dr. Reed, who had been suddenly called to Washington, had left orders to "try mosquitoes".

So on August 27th, Dr. Carroll permitted himself to be bitten by one of Dr. Lazear's infected mosquitoes, one that had sucked the blood of four individuals, two with very severe cases, twelve, six, four and two days previously. Dr. Carroll achieved the distinction of being the first case of experimental inoculation with yellow fever through the bite of an infected mosquito. He was stricken with yellow fever on August 31st. Dr. Carroll recovered, and was henceforth, like Dr. Agramonte, immune to further attacks of yellow fever, a circumstance which added considerably to the future value of these two men as members of the Commission.

The experiment on Dr. Carroll revealed a most important fact, namely, a minimum incubation period of approximately twelve days. This fact explains Dr. Finlay's failure through a period of twenty years to produce yellow fever experimentally by the bite of his mosquitoes. Another important fact, discovered later, was that in order to infect the mosquito the patient must be bitten during the first three to five days of the disease. During the course of their earlier experiments, Dr. Lazear was accidentally bitten by an infected mosquito in Las Animas Hospital. He died of yellow fever on September 25, 1900.

This was the state of affairs when Dr. Reed returned in October. Dr. Carroll and a volunteer "X. Y." had been successfully inoculated with yellow fever through the bite of a mosquito; and one member of the Commission was dead through accidental, though also voluntary, inoculation.

Speaking before the Public Health Association in Indianapolis at the end of October, 1900, Dr. Reed now felt himself justified in stating that "the mosquito acts as the intermediate host for the parasite of yellow fever."

Reed returned to Cuba early in November and preparations were now made for the final experiments which were to be so thorough that not the least doubt could ever attach to them. Camp Lazear was established, a mile out in the country beyond Quemados. Seven hospitals tents were erected and two special small wooden houses. In the tents two American soldiers, Privates Kissinger and Moran, of Ohio, and five "Spanish immigrants" nursed their experimental attacks of yellow fever received through the bite of a female Stegomyia. They had freely volunteered as objects of experimentation, and our soldiers gave further evidence of their fine and unselfish purpose by a refusal of the compensation of $250.00 apiece provided by the Government. Only one case died, one of the immigrants. In the two wooden houses was tested by the aid of volunteer soldiers the possibility of infection through clothing and bedding (fomites). One of these volunteers was Dr. R. P. Cook, a medical graduate of the University of Virginia in the class of 1897, recently sanitary officer of Accomac and Northampton counties, but now with the Rockbridge County Health Department, at Lexington, Va. These experiments

definitely disproved any other mode of natural infection except through the medium of a mosquito. All of these later experiments were so thorough and well controlled that not the least suspicion has ever been entertained regarding their finality. "Reed's discovery of the mode of propagation of yellow fever is worth more than the cost of the Spanish War, including lives lost and money expended", declared Major Kean in a burst of enthusiasm.

Further experiments showed that yellow fever could be transmitted by direct injection of blood from a yellow fever patient during the first few days of the attack. Dr. Reed sums up this work with the statement that "it confirms what the mosquito inoculation had already shown, viz., that this parasite is present in the general circulation; second, that passage through the body of the mosquito, although this would seem to be nature's method, is not absolutely necessary in the life history of this micro-organism; and third, that the period of incubation of the disease, when thus produced, corresponds fairly closely to that occasioned by the mosquito's bite". This work failed to reveal on bacterial culture of infective blood any sort of bacterium, and thus disproved the claim of Sanarelli that bacillus icteroides is the specific agent of yellow fever.

Dr. Reed left Cuba in February 1901 and returned to his work in Washington. He now devoted most of his time to his teaching duties in the Army Medical School and in the Columbian University. He had the essential qualities of a successful teacher. He had mastered bacteriology and pathology, and he presented the subject in didactic lectures in an orderly, authoritative, and inspiring manner. Notable expressions of scientific honor and respect poured in upon him. In 1902, Harvard University conferred on him the honorary degree of M. A., and shortly afterwards, the University of Michigan the degree of LL.D. And then suddenly, in the prime of life, with his honors fresh upon him and a great career before him, he died on November 22, 1902, of appendicitis, at the age of fifty-one.

In estimating the value of the work of Walter Reed and the Yellow Fever Commission, two other great names must always be held in gratitude and honor—Dr. Carlos J. Finlay, of Havana, Cuba, and Major William Crawford Gorgas. Dr. Finlay's peculiar services have been evaluated above. Finlay furnished the working hypothesis which Reed tested and proved correct. Gorgas built upon the work of Reed, and in so doing made possible the success of our military occupation of Cuba after the Spanish-American War. Gorgas, as attache to the Governor-General Leonard Wood, changed Havana from one of the worst pest-holes to one of the cleanest and healthiest cities of the world. Subsequently he did as much for the Isthmus of Panama, and through control of malaria and yellow fever contributed the essential elements for the successful building of the Panama Canal. The French attempt made under de Lesseps, in 1880, failed chiefly through the ravages of these two diseases. Gorgas, building upon the foundation reared by Reed, drove yellow fever from Cuba and Panama, and so freed the United States from further danger from these age-long foci of yellow fever infection.

The knowledge of Reed's discovery and the practical methods devised by Gorgas for the application of this knowledge, have spread over Central and South America, with the result that these countries are now practically free of the blight of yellow fever. At the close of the World War, during which he served as head of the Medical Corps, Gorgas, under the auspices of the International Health Board, directed a campaign against yellow fever in Guayaquil, Ecuador, one of the most formidable strongholds for centuries. Within six months the city was free of the disease. This accomplished, Dr. Gorgas turned his attention to what was considered yellow fever's last citadel, the Belgian Congo. Dr. Gorgas suffered a stroke of paralysis in London, while making preparation for this last fight, and he died a few weeks later. The work in the Belgian Congo has been continued by others and the results warrant the enthusiastic statement of de Kruif, "that in 1926 there is hardly enough of the poison of yellow fever left in the world to put on the points of six pins, in a few years there may not be a single speck of that virus left on earth,—it will be as completely extinct as the dinosaurs,—unless there is a catch in the fine gruesome experiments of Reed and his Spanish immigrants and American soldiers".

There is glory enough for all in this strange and thrilling battle:—Finlay, Reed, Gorgas, Carroll, Lazear and the heroic soldiers of the United States. And yet it is true that it was Reed's scientific skill in devising and carrying out inflexible scientific investigations that *gave*

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the proof regarding the mode of transmission of yellow fever. This incontrovertible knowledge was the vital matter, and this was Reed's brilliant contribution.

Mr. Mark Sullivan, in his remarkable book, "The Turn of the Century," emphasizes a striking aspect of the eradication of yellow fever: "the enrichment that came of relief from anxiety, the intellectual and spiritual release, the more abundant flowering of man's powers that followed security from the tyranny of fear . . . And it may reasonably be contended that Walter Reed and William Crawford Gorgas brought to men freedom in a more happy sense and in a larger measure than any military or political leader of modern times." Dr. Howard Kelly eloquently declares that the inspiration of Reed's life lies in the fact, "though a man of war, he ravaged no distant lands, destroyed no tens of thousands to make his reputation, but by quiet methods, when there was no strife, saved countless lives and swept away a hideous plague, which from time immemorial had periodically visited our shores, devastated our fair land, and too often snatched from the years of peace and plenty all their blessings."

In ancestry, education, and training, Walter Reed is American to the bone. His work ranks among the greatest scientific discoveries in the history of medicine. The beneficient effects of his discovery of the mode of transmission of yellow fever bless the wide world. The best type of warm hearted, keen minded scientists live in his personality. The facts of his life glow with inspiration to medical students touched with ambition to serve mankind. Here is a real hero, endowed with a fanaticism for veracity and a purpose that no obstacle could daunt, emerging from one of the tensest battlefields of man's perpetual war against human misery and death.

The University of Virginia was established in 1819. In the one hundred and eight years of its existence, an army of nearly thirty thousand men have passed through its walls. In this host appear presidents, governors, bishops, physicians, warriors, teachers, men of science, poets, industrial leaders, and engineers, who have contributed their share to the betterment of society. It is no immoderate appraisement to declare that no one of them has made mankind his debtor in so vast and precise a degree as Walter Reed, the Army Surgeon.

Can the great profession of medicine honor itself more nobly and enduringly than by erecting a memorial which shall perpetuate his example and his fame to other ages in the great University which first quickened his pure ambition and in the sincere old Commonwealth which gave him birth and nourished his youth?

ACUTE UPPER RESPIRATORY INFECTIONS OF CHILDHOOD.*

By ROGER H. DENNETT, M. D., New York, N. Y.
From the Pediatric Department of the New York Post-Graduate Medical School and Hospital.

Certain infections of the upper respiratory tract in children have not been emphasized sufficiently in the literature, and since they are frequently seen by the clinician it would seem worth while to discuss them. I refer to those cases that run a prolonged course with high, usually remittent fever, in which through their entire course no focal symptoms are evident. We have commonly called this group of cases grippe or influenza or bronchitis, but perhaps the very fact that they have no definite name has made them confusing to the general practitioner as well as to the pediatrist. As a matter of fact, no definite micro-organism has ever been found in any large enough series of cases to convince us that any one micro-organism is responsible for this clinical entity. Some years ago Holt described a series of cases in which the influenza bacillus was isolated, but this is only possible in a small majority of upper respiratory infections. In the face of a definite influenza epidemic, such cases are extremely common and the physician makes the diagnosis and is satisfied with it, but with endemic cases which seem to be with us every year throughout the winter months we are less satisfied when we term them influenza.

To describe a typical case briefly, W. L., a girl six years of age, was taken suddenly ill with a temperature of 103. She had a very slight almost negligible cough, her throat was slightly reddened, the physical examination was negative, including ears, sinuses, heart, lungs, abdomen, and urine. The next morning the temperature was down to 100 but that night rose to 106. When the temperature was high she looked rather ill; when the temperature was low she appeared happy and one would hardly imagine that she was ill. This condition of affairs continued for four weeks,

*Read by invitation at the fifty-seventh annual meeting of the Medical Society of Virginia, in Norfolk, October 12-15, 1926.

the remission becoming even more extreme and variation of 10 degrees in temperature often being observed in one day, striking 106 at the highest point and 96 at the lowest. The white count showed practically no leucocytosis, 14,000 white cells being the highest; the Widal was negative throughout, plasmodia were never found in the blood and daily examination of the urine revealed no pus or bacteria. Blood cultures were taken at intervals and found negative. There was considerable anaemia and, since such a prolonged infection is apt to drain the red blood cells and the hemoglobin, a secondary anaemia is a frequent accompaniment. Complete recovery took place and the child has been well ever since.

If this were an isolated case in one's experience, it would be extremely puzzling since there was no epidemic of influenza at the time. On the other hand, each year throughout the winter months we see many such cases, some of them of less duration, perhaps a week or ten days; others without such extremes in temperature, but all with negative physical and laboratory findings throughout the course of the infection.

Certain of these upper respiratory infections seem to focalize, and there the average physician seems to be more at home in making a diagnosis. Occasionally, and it is always well to forewarn the family of this contingency, true lobar pneumonia will develop. In such an instance, it may have been possible that the pneumococcus has been responsible for the entire infection and that there may have been an area of consolidation somewhere in the lungs from the beginning. As a matter of fact, I would warn against making a diagnosis of upper respiratory infection pure and simple, unless the lungs are X-rayed from time to time. There is no question that many cases of true pneumonia go through their entire course without any physical signs and that occasionally the diagnosis of pneumonia is only made by the X-ray, since such has been found the case in a fairly large series of hospital children where X-rays are taken routinely and where the diagnosis is often made by the X-ray plate. I remember some years ago when X-rays of the lungs were new and proving to be of great aid, one of my colleagues, an X-ray man of note, said to me, "I never did believe that the clinician could discover all of his pneumonia with a stethoscope. A very small area of consolidation covered by a large area of normal lung tissue cannot always be made out by auscultation and percussion." We now know that he was right.

Another complicating factor of these upper respiratory infections which does not seem to be emphasized in the literature in connection with prolonged fever, is acute swelling of the lymph nodes, both in the neck and mediastinum, which do not go on to suppuration. Just such a case as I have described may be seen commonly, accompanied by acutely swollen glands in the neck that are tender but do not become red or fluctuating at any time during the course of the disease. The significant fact is that these glands are only a part of the upper respiratory infection and, although it has been given the name of acute glandular fever and there is something definite to see and feel, to my mind it is still only one and the same infection with a visible manifestation. Such cases may go on to suppuration and require incision and drainage, and in such instances the streptococcus is usually found to be the invading organism.

One case is recalled which continued a high remitting fever for two months before an enlargement of the glands appeared in the neck, and finally when suppuration did appear it seemed to be an evidence of resistance on the part of the patient, for recovery gradually took place from that time. Mediastinal lymph nodes may be discovered only by X-ray, and they are not as uncommon as might appear, when routine X-rays of the chest are taken. They sometimes go on to abscess formation and an acute suppurative mediastinitis is not as rare as it is thought to be.

Acute otitis media is the commonest complication of these upper respiratory infections in children. The chief object of this paper is to try to convince the otologist that ordinarily acute otitis is only a part of an upper respiratory infection. Hundreds, and it might be said thousands, of mastoid operations in this country would be avoided if this view of the situation were taken. The otologist is not to blame, for it is the duty of the pediatrician to show him that this is true. In talking with a fairly large number of pediatricians it has been found that this viewpoint is quite commonly shared by them. The attitude that the otologist has taken has been, that, given a case of acute otitis media with bulging drum, incision and free drainage are indicated, when the temperature should subside within a day

or two, and, after discharge of pus from the canal for a week or ten days, complete recovery should take place. On the other hand, where the temperature does not subside with free drainage, the otologist suspects mastoid involvement, and an operation, sometimes as an emergency, but latterly with less haste, is urged. It has been said that a mastoid operation is never an emergency and I am inclined to coincide with this view. It is a fact that in most, if not all cases of otitis media of any considerable duration, there is pus in the mastoid cells, but the surgeon should not consider that the operation was necessary simply because he found pus when the mastoid was opened. Where no necrosis of the bone is found, it may be concluded that the operation was unnecessary and that probably the pus would have drained equally well through the middle ear and recovery taken place with less distressing circumstances and in less time through middle ear drainage.

A case is recalled in which an upper respiratory infection with an accompanying otitis media was seen with the otologist. Both drums were promptly incised, pus drained freely through the canals but the temperature did not subside. After a few days the otologist insisted upon opening both mastoids, which he did after some opposition on my part. In the meantime another member of the family about a year younger, started with the some infection. The drums were promptly incised and continued in exactly the same course. Operation was immediately advised by the otologist but I objected and in a very friendly spirit the otologist said, "All right, you can call this your case and I will take care of mine and see which gets well first". It can only be said that the member that was operated was still having daily dressings, was pale, anaemic, emaciated and sick at the end of two months, whereas the unoperated case was healed in two weeks, was out playing in three, and at the end of the two month period was a robust, healthy, and vigorous object lesson to the otologist.

The otologist's attitude can well be explained. His is the responsibility if the infection extends beyond the mastoid to sinus thrombosis or septic meningitis, but he should not forget that a continued high remittent fever may be due to an upper respiratory infection and that there must be very definite symptoms of sinus thrombosis beside fever. Last spring I made a statement before my students that although I had incised a great many ear drums throughout the winter, sometimes as many as four or five a day, I had not had a single mastoid among them, and I had followed every single case in private practice through its entire course. The very next day one of the children with otitis media which had been under my treatment, was seen with extreme tenderness and edema over the mastoid cells coming on three weeks after the original incision of the ear drum. This child was promptly operated and went uninterruptedly to recovery. Although I usually see more mastoids than this in the course of a year, this was the only one seen during the past winter season. The entire treatment of otitis consists in incising drums promptly and thoroughly once, not repeating the incision unless there is improper drainage, irrigating the canal every two hours with a mild sterile antiseptic solution such as one teaspoon of boric acid to the quart of water, one quart to each ear, with a Lucae's ear tip attached to a fountain syringe, all of which must be sterilized each time, irrigating every two hours in the daytime, four hours through the night, avoiding blocking up the canal with cotton or any other dressing or irritating the canal with strong medicants of any kind. The more thoroughly and carefully and conscientiously the irrigations are done, the sooner will recovery take place. It goes without saying with prolonged or recurring otitis one should have all adenoids cleaned out the nasal pharynx, and diseased tonsils removed. Where there is much nasal obstruction, removal of the adenoids will often clear up an oral discharge at once; sometimes removal of the tonsils is advised at the same time, but it seems better judgment in the light of our present knowledge to remove the tonsils later and not during the course of acute infection.

But what are the indications for a mastoid operation, for such there are? In the first place, pain, continued pain, after the drum has been incised and is draining freely, especially when accompanied by fever. In the second place, deafness over a prolonged period and seemingly getting worse if accompanied by fever and pain. In the third place, destruction of bone when seen in the X-ray plate. In the fourth place, sagging of the posterior wall, if it continues and if there are other signs as well. Finally, redness, swelling, ten-

derness, and edema over the mastoid processes often with pushing forward of the auricle. Tenderness alone over the mastoid is not an indication for operating.

In conclusion, apologies are offered to the otologist. He has done his duty conscientiously as he sees it. The busy pediatrician perhaps sees more middle ears in the course of his winter's work than the otologist. He certainly sees the upper respiratory infections that the otologist does not. A drive is on to prevent unnecessary mastoid operations, and pediatricians feel sure that the otologist is anxious to co-operate in this drive. The day is over when a prolonged fever with a running ear is in itself an indication for a mastoid operation, nor is an aural discharge lasting two or even three weeks an indication, nor is tenderness alone with fever and discharge an indication.

125 *East Thirty-ninth Street.*

DISCUSSION

DR. ST. GEORGE T. GRINNAN, *Richmond:*—I think this is one of the most interesting papers I have heard in a long time. I have two young boys. After long argument both were operated on for mastoiditis. What Dr. Dennett described is actually true. My wife objected very much to the operation, because she was raised at the University of Virginia, and her ears ran ten years, and she never had to be operated upon.

Every pediatrician is asked, all during the winter, the value of vaccines, with which I have not been successful. I should like to ask Dr. Dennett his opinion with regard to the cold and influenza and other stock vaccines.

DR. H. S. HEDGES, *Charlottesville:*—If Dr. Grinnan's wife had had an operation, her ears would not have run for ten years.

DR. W. B. MCILWAINE, *Petersburg:*—I want to say that the otologists in Virginia evidently differ a great deal from the otologists in New York City, for every year I have to urge my consultants to operate on mastoids. I very often diagnose a mastoid before they do and then have to urge operation.

Of course, a paper like Dr. Dennett's is of very great value, and a great many lessons can be learned from it; but it is impossible to give a picture of upper respiratory infections in a short paper. Certainly the otologists whom I see in Virginia are not prone to operate quickly and are much more apt to take the judgment of the pediatrist. So far as my experience goes, I generally have to urge the operation and not fight it off as Dr. Dennett seems to have to do.

DR. ————:—I rise to ask Dr. Dennett what are the diagnostic symptoms that indicate puncturing of the drum and his technic for doing it.

DR. C. S. DODD, *Petersburg:*—I should like to ask the doctor what otologist he ever heard say that pus in the mastoid is an indication for operating? He does not see the pus until he goes in there. So we do not make an argument along that line, nor do we hold that pain alone is an indication for operation. We do as the general surgeon does in a case of appendicitis,—put all the symptoms together and decide what course to follow. I want to tell you that if you let the ear discharge indefinitely, you are going to get mastoid cases and brain abscess and what not, and you may have the pleasure of seeing the undertaker get your patient, whether the patient be a child or an adult, if you just let it go long enough. I do not know just how eager the men in New York City are to operate, but we do realize that operating for mastoiditis is a rather serious business. However, waiting for the pain, tenderness and other symptoms to disappear is also serious.

DR. J. H. HIDEN, *Pungoteague:*—Sometime ago I had a patient brought to me suffering with acute otitis, and I decided to make an incision and open the era-drum and did so. There was a great discharge of pus very soon. The temperature soon fell from 103 down to 99, and then became about normal. That lasted for several days. I used boric acid douches, as Dr. Dennett has just described to us. In about a week that child developed fever again, and there was a good deal of tenderness over the mastoid. I began to get a little uneasy and sent the case off to a specialist for a mastoid operation. He said the condition was one of the worst he had ever seen which recovered, but finally this child did recover. I asked myself again and again if I had done right in using hot douches and syringing out the ear, as I recalled that Dr. Ballenger, of Chicago, is opposed to that. I was a little worried to think that I had gone in opposition to so eminent a man that was opposed to using those douches, on account of the possibility of getting infection inside; but I find now that I have an eminent man on my side, after all, and it makes me more comfortable. Thank you, doctor!

DR. W. P. MCDOWELL, *Norfolk:*—I have listened with a great deal of interest to Dr. Dennett's timely paper and to the discussion which has followed. I do not rise with a desire to further prolong the discussion, but I should like to ask a question. Say we have an acute otitis media, paracentesis has been done, and the X-ray shows definite mastoid involvement. What is to be our criterion as to whether this case will get well if left alone or that it is one in which we should resort to mastoid operation? This is a point on which we need a clearer idea.

DR. ROGER H. DENNETT, *New York City,* (closing the *discussion*):—I knew this would be a very unpopular subject, and I almost wrote Dr. Harris that I should like to change my topic, after I had written the paper. It is an unpopular subject with us in New York. I do not know anything about your otologists down here, so that proves I did not come down to insult them. But ours vary so tremendously that that is one excuse I, a mere pediatrician, a baby doctor, have for writing such a paper. The otologists vary so tremendously that we do not know who is right. Some use douches, and some do not; some say operate, and some say wait. But I do know that each year I have fewer and fewer mastoids, and my cases are among a fairly intelligent class of people (private cases). Now, I do not know anything about adults' mastoids. I am not even going to answer that question about how to incise an ear-drum. Nobody ever taught me; I learned it from the textbooks. My whole course at the Harvard Medical School, twenty-five years ago, consisted in sitting up on the top seat in the amphitheater and watching Clarence Blake look through an auroscope. That was my entire training in school, but my training has been ever since then, day after day, year after year, seeing these children with otitis. We can not call the otologist every time to open an ear-drum. We examine the ear-drum as routinely as we do the throat or the chest in a child that has a fever. There-

fore, I must say I think the pediatrist has, with this enormous experience, an opening. I hope nobody gathered that I think a mastoid operation should never be done. I think I gave the indications as I see them. Nor do I want to give the impression that I have ever had a year since I began practicing with only one mastoid. Perhaps it was a milder infection last year; perhaps it was good luck. Every year certainly we do have four or five mastoids which I do turn over to the otologist and in which I welcome his surgical work.

As to how long to wait, I am not going to set a definite period of time when the mastoid should be opened up. It is a matter of keen judgment—and the keenest judgment. I think when we have not had this experience, we have to rely upon the otologist's judgment in the matter, but their judgment varies so much that it is very difficult for me to allow them to decide, without more than one opinion, when the question is in doubt. Perhaps our otologists are different from yours. I see it; I prevent mastoids; I do it every winter. I see it in consultation perhaps with an out-of-town otologist. I see they want to open the mastoid when a fever keeps up for perhaps four or five days after the ear has been incised; they want to do it for nothing except the continued discharge from the ear. Perhaps you do not see that, but I do, and that is the sort of thing to which I believe it is well worth while to call attention.

THYROID DEFICIENCY.*

By JAMES H. SMITH, M. D., Richmond, Va.
Department of Medicine, McGuire Clinic.

The outspoken forms of thyroid deficiency, cretinism, myxedema and cachexia strumipriva, were clearly described before the days of basal metabolism tests. On the other hand, a wide and increasing range of possibilities in treatment has been opened up around the central fact that very definite thyroid lack may exist independent of the classical pictures of extreme grades of hypothyroidism. This newer body of observations has not been classified nor by any means completed, and yet, obviously, it is here that our attention must be focused rather than on the familiar gross clinical states.

Internists, general practitioners and all diagnosticians are without doubt ready to welcome any positive idea that will somewhat reduce the number of so-called neurasthenics. Doubly welcome is such a concept if it carries with it a simple and efficient remedy. Many conservative clinicians are proving to their own satisfaction that in thyroid deficiency there is some redemption from the snare of neurasthenia. The more one watches out for it the more common it seems to be. Indeed, I have heard there exists in other clinics the feeling we have in our work, that we may be finding too many. More time must elapse before the real importance of mild sub-thyroid states can be estimated. Basal metabolism is beyond question a fundamental sort of thing in the physiology of health and disease, but so also are body height and weight. I am sure many of us lack patience with the notion that an individual's weight must bear some exact relation to his height in order to enjoy good health, and we should not hastily attribute illness to an individual if casually we should find his metabolic rate somewhat low or high. By "casually," I mean, for example, in a series of tests run on supposedly normal subjects. If, on the other hand, the patient comes complaining that he is sick, an abnormal metabolic rate is to be taken into account with any other available diagnostic evidence. The purpose of what has been said is to anticipate a random quality and a tentative note that I am not going to be able to avoid.

It is practically, if not absolutely, true that the diagnosis of thyroid deficiency may be considered established if the metabolic rate is definitely low and the administration of thyroid substance proves definitely beneficial. Since we are not prepared to advocate routine determinations of the metabolism, two questions immediately present themselves:

What circumstances should lead to investigation of the metabolic rate?

What conditions other than thyroid deficiency cause an abnormally low basal metabolism?

The contrast between the classical conception of sub-thyroidism and the present understanding of some of the milder forms is seen in that, instead of sluggishness and mental inertia, there may be nervousness and irritability; the pulse rate may be increased rather than slow; the thyroid may be either appreciably atrophied, greatly hypertrophied, or apparently normal; the skin may be soft and pliable and the hair fine; and the patient may be underweight rather than overweight. Exception can hardly be taken to most of the atypical features ascribed in the recent literature to thyroid lack when those claims have been supported by metabolism studies. Nervousness is not an infrequent complaint in this type of case. An initial pulse rate of 124 was observed in one of our patients, and the following day a basal metabolic rate of minus 14 was obtained with a pulse of 74 to 80. But in the matter of low body weight it is possible not enough care has been used to distinguish

*Read before the fifty-seventh annual meeting of the Medical Society of Virginia, at Norfolk, October 12-15, 1926.

between the low metabolism of undernutrition and the low metabolism of hypothyroidism. I know of no conclusive proof that the thyroid is in any way responsible for the low heat output in experimental or pathological starvation, and it does not seem unreasonable to believe that the fire burns low as any other fire does when the supply of readily available fuel becomes low. Two cases in the service of Dr. Hunter McGuire will serve to illustrate the contrast. Both were seventeen year old girls with a previous average weight of about 130 pounds. Miss A. had suffered a loss of 49 pounds beginning as a voluntary reduction by dieting, which resulted in anorexia and progressive weight loss. The basal metabolic rate, which was minus 36, was brought to normal (minus 2) within two months, coincident with a gain of 34 pounds, under general treatment without thyroid. Miss M., on the contray, had gained 15 pounds, presented clinical evidence of hypothyroidism, basal rate minus 32, and is responding to thyroid medication according to expectation.

Perhaps it is better to regard the question of undernutrition in hypothyroidism as unsettled, and, furthermore, not to conclude, as yet, that thyroid medication is contraindicated in undernourished individuals with low metabolic rates. As an activator of metabolism, it may set in motion physiological processes which will result in improved nutrition if adequate food is supplied for energy needs plus storage. However this may be, it would seem likely that differences in dosage would be needed as compared with thyroid poverty, and if this is the case differentiation is important.

To emphasize the value of metabolism determinations in thyroid disease I could cite cases in which a high rate was suspected and a subnormal reading obtained. To emphasize its limitations I would refer to a case of cachexia strumipriva quite dependent on thyroid medication, in whom we have not been able to get a reading below plus 25. In this case we do not consider the metabolism tests acceptable.

Two or three facts with reference to metabolic rate studies are worth emphasizing here even at the risk of repetition. Limits of normal should not be taken too literally. Especially on the plus side we should think in terms of ten rather than of one. The first accepted upper normal limit of plus 10 has about given way to plus 15, and possibly the lower limit, instead of minus 10, might better be placed at minus 5, though nothing presented in this paper requires such a shift to support it. Another observation with which technicians are more familiar than clinicians is that a reading below normal is less likely to be erroneous and misleading than one above normal.

While speaking thus parenthetically, I would refer to special difficulties in estimating the metabolism of children. In addition to a frequent inability on their part to co-operate in methods of indirect calorimetry, there is no generally accepted standard of normal for children. After examination of the original published data of subjects selected as normal, chiefly those of Benedict and Talbot[1] and of DuBois,[2] I am inclined to think that the best standard in both sexes for the present is furnished in Benedict and Talbot's average for age unless the child is obviously both overheight and overweight, in which case the average for height should be used as the standard: and that in children at or approaching puberty DuBois' average for boys, twelve to fourteen, further subdivided so as to allow more exactly for fractions of years, is the most acceptable standard for boys, and the same figures less 7 per cent for girls.

Approaching more directly the inquiry as to when the possibility of a low metabolism should be investigated, the more characteristic special hints are slow pulse, coarse hair, heavy but non-pitting, dry skin, malnutrition of the nails, sensitiveness to the perception of cold, physical and mental inertia, overweight and a full, pudgy facial expression. More generally I would say that, whenever we have not arrived at a satisfactory diagnosis in a patient showing vague constitutional symptoms, a basal metabolism study is made for purposes of elimination. It is this group with vague subjective symptoms but lacking any outspoken physical signs of thyroid deficiency, that has impressed us as important on grounds both of frequency and therapeutic possibilities. It is illustrated by the case of Miss L., aged 34, presenting the appearance of good health and negative physical examination, complaining of nervousness, general aching, the symptoms of a vasomotor rhinitis, sensitiveness to cold, and constipation. Basal pulse 78; B. M. R. minus 15. The patient felt well after six weeks' thyroid medication, when the B. M. R. was plus

11. The change in rate was not accompanied by loss in weight, and this failure of correlation between the two we find to be not at all exceptional.

We are further interested in the association of sub-thyroid states and certain other clinical findings which will be alluded to, though the case histories cannot be quoted here at length.

Nephritis, especially cardio-nephritis, leads to caution in thyroid therapy. However, in the case of a woman, aged 54, blood pressure 238/120, cardiac hypertrophy, chronic nephritis, B. M. R. minus 18, most satisfactory subjective and objective improvement followed thyroid therapy, the blood pressure declining to 160/90 and the B. M. R. increasing to plus 6. Nephrosis as described by Epstein, with its hypothyroid features, was not difficult to exclude. The usual cardio-nephritic regime was followed, but the results were better than usual.

In a few cases digestive symptoms unassociated with demonstrable organic lesion, characterized by constipation and either hyperacidity, normal gastric contents or achlorhydria, with low metabolic rates, have responded to treatment based on thyroid deficiency. Four cases of hypothyroidism showed achlorhydria without furnishing any data relating the two as cause and effect.

We have not followed closely the supposed relationship between the thyroid gland and sugar tolerance. There seems to be no frequent clinical connection between over-activity of the gland and diabetes mellitus, and if a high sugar tolerance was ever helpful in the recognition of low thyroid states, metabolic rate determinations have reduced its relative value.

On the other hand, Thacher and White's[3] description of a characteristic cardiogram of myxedema, with a low T-wave in Lead II and general low potential, has been confirmed to the limited extent we have followed it, and would seem to be of genuine clinical significance.

Of the interrelation between ductless glands, so much has been said that there is a danger either of bewildered inaction or of shot-gun therapy. With regard to the thyroid in its relation to the pituitary, the ovaries and the adrenals, I am disposed to give pituitary with thyroid substance when the pituitary indications are clear, to omit attempts at ovarian or adrenal substitution therapy at least in the beginning of thyroid administration, and in all cases with a low metabolism to keep the possibility of thyroid need in the foreground.

An interesting case of cachexia strumipriva with achlorhydria is mentioned here on account of skin lesions strikingly resembling pellagra. Prompt disappearance of the lesions, with extensive desquamation, occurred under thyroid administration along with dilute hydrochloric acid.

In contradistinction to the foregoing where the thyroid is believed to have a positive role, we have rarely found a low metabolic rate in frank cases of obesity without constitutional symptoms.

I turn now to a few scattered observations on therapy. When more information is available it will be of interest to discuss the permanence of thyroid deficiency and the conditions governing the period during which treatment is required. For the present better therapy will be practiced if physician and patient regard them as permanent unless or until proven otherwise.

There is a definite need for standardization of the various preparations on the basis of thyroxin content or physiological potency. For simplicity of administration and freedom from unpleasant by-effects, we regard the tablet form as preferable, but under prevailing conditions it is neccessary that one familiarize himself with some reliable preparation, best measured in terms of the metabolic rate.

Since, as in other substitution therapy, it is important to have the co-operation of the patient, some conservatism is advisable in establishing the required individual dose, in order that the patient be not disconcerted through the production of a disagreeable, possibly dangerous, reaction from over-dosage. In order to avoid any probability of over-dosage while the patient is not under observation, it is our custom to introduce some routine break in therapy, and to suggest that, while it is not necessary to count one's own pulse, an unpredicted loss of weight or increased pulse rate, or the intervention of an acute illness, should lead to the omission of thyroid for the time being.

Before summarizing what has been said, I would emphasize the belief that, for some time to come, great discrimination will be required to distinguish whether a low metabolic rate and its implication as to the thyroid gland is the essential clue to the patient's ill health. The intriguing interest of the thyroid gland,

its measurable function and its specific therapy can easily lead the enthusiast to overlook some stubborn pathology elsewhere that will not be touched though the metabolic rate be brought to straddle the dividing line between plus and minus.

Summary

1. There is a degree of the hypothyroidal state that is of clinical importance not only short of, but more or less in contrast to the clinical picture of gross forms of the condition.

2. The basal metabolic rate should be determined:

(a) If any suggestive signs or symptoms of hypothyroidism present, and

(b) Before arriving at a diagnosis of neurasthenia, psychasthenia, vagotonia, constitutional diatheses and like vague terms.

3. The established fact of a low metabolic rate does not establish hypothyroidism as the final diagnosis.

References.

1. Metabolism and Growth from Birth to Puberty: Frances G. Benedict and Fritz B. Talbot, Pub. No. 302 of the Carnegie Institute of Washington.
2. Metabolism of Boys Twelve and Fourteen Years Years old: Olmstead, Barr and DuBois, *Arch. Int. Med.*, XXI, (1918), p. 621.
3. The Electrocardiogram in Myxedema: Catherine Thacher and Paul D. White, *Am. Jour. Med. Sci.*, CLXXI, January, 1926, p. 61.

FURTHER EXPERIENCE WITH IODINE IN GOITRE.*

By I. A. BIGGER, M. D., University, Va.

From the Department of Surgery, University of Virginia Hospital.

Two years ago I reported to this Society the results obtained in fifteen cases of exophthalmic goitre by the pre-operative administration of Lugol's solution of iodine as advised by Plummer[1] in June, 1923. The results were most encouraging. Since that report we have operated upon eighty-two patients for goitre. Seventeen of these were adenomata with normal function; thirty were adenomata with hyperthyroidism, and thirty-five were of the exophthalmic type. The exophthalmic cases all received iodine; twenty-nine of them for the first time. The usual dose was M. xv daily and the duration of pre-operative treatment averaged sixteen days. Only one case failed to improve.

*Read at the fifty-seventh annual meeting of the Medical Society of Virginia, at Norfolk, October 12-15, 1926.

Chart No. 1 shows an average decrease of 22 per cent in the metabolic rate, and ten beats per minute in the pulse rate. Ligation of the superior thyroid arteries was considered necessary in five cases. Three of these had received iodine for several weeks before coming under our observation, so had passed the period of greatest remission.

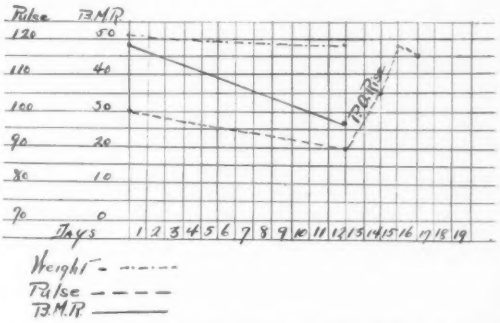

Chart I.—This chart shows the average pulse, weight, and basal metabolic rate changes in twenty-nine cases of exophthalmic goitre treated with iodine.

Iodine was administered during the immediate post-operative period in all cases and a few were advised to take small doses for several months. There were some moderately severe post-operative reactions, only one of which was alarming. We had no operative deaths. One case which will be reported in detail died while under observation.

Within the past two years numerous reports of good results by this method of treatment have appeared in the literature. Pemberton[2] states that the number of ligations now as compared to the number before using iodine is in the ratio of 1:11. Also, according to him, acute post-operative thyroidism has been almost eliminated at the Mayo Clinic. It seems to be established that iodine is of great value as a therapeutic agent in the pre-operative management of exophthalmic goitre.

Iodine in Adenomatous Goitre

Lahey[3] and numerous others have observed simple adenomata become toxic after taking iodine. Frazier[4] says "under no circumstances should iodine be given to a patient with an adenoma whether it be toxic or non-toxic, except when the patient is in a hospital where he is being prepared for operation." In the previous report I concluded that we were justified in using iodine in suspected toxic adenomata when exophthalmic goitre could not be excluded. We have treated seven patients

with toxic adenomata with Lugol's solution. In three the results were comparable to those obtained in exophthalmic goitre; in two others there was little change and in two the symptoms were accentuated. Graham[5] states that his results are equally good in toxic adenomata and the exophthalmic type. He advances the view that adenomatous goitre with hyperthyroidism and exophthalmic goitre are different phases of the same disease. Decourcey[6] has not found iodine of value in the pre-operative treatment of toxic adenomata, but has noted a marked decrease in the reaction since using it as a post-operative measure.

From our small group of cases it would seem wise to try iodine in all cases of adenomatous goitre with hyperthyroidism, but only as a pre-operative measure and under careful observation.

Iodine as a Curative Agent

A few reports of encouraging results from the continued administration of small doses of Lugol's solution are to be found in the recent literature. Read[7] found that, out of a series of twenty-five cases of exophthalmic goitre treated, eleven showed marked improvement, eight improved to a moderate degree, and six did not improve. The majority of writers report unsatisfactory results with such treatment. We have had an opportunity to follow six patients with exophthalmic goitre who were treated over periods of time ranging from six weeks to two years and in no case was there permanent improvement. I will refer to three of these cases in some detail.

Case Reports

Case 1.—Mr. L. E., white, aged 19 years, was admitted to the University of Virginia hospital, May 7, 1921, with the typical symptoms and signs of exophthalmic goitre. Both superior thyroid arteries were ligated and he was advised to return in three months for thyroidectomy. He did not return until July 3, 1922, at which time a partial thyroidectomy was performed. On February 5, 1924, he returned with recurrence of symptoms and a basal metabolic rate of plus 41 per cent. Three applications of radium were given over the thyroid, but in April, two months later, he was still quite toxic, with a metabolic rate of plus 31 per cent. He was given Lugol's solution M. iij once daily, and two months later was improved; with a metabolic rate of plus 14 per cent. The iodine was continued for two weeks each month until July 7, 1926, when his metabolic rate, which had remained above normal, was plus 28 per cent; his pulse rate 110 per minute. Partial thyroidectomy was performed July 12; uneventful convalesence. Microscopic examination revealed relatively large acini, lined by cuboidal epithelium and filled with quite dense colloid.

Although this patient received iodine over a period of two years, there was little permanent improvement.

Case 2.—Mrs. G. W. A., white, aged 49 years, was admitted to the University of Virginia Hospital, March 31, 1926, with the characteristic symptoms and signs of exophthalmic goitre. The present illness was of three years' duration. In December, 1925, three months before entering the hospital, she began taking Lugol's solution M. xv daily. Her symptoms improved for a time but gradually returned. When first seen by us she was quite toxic, with a basal

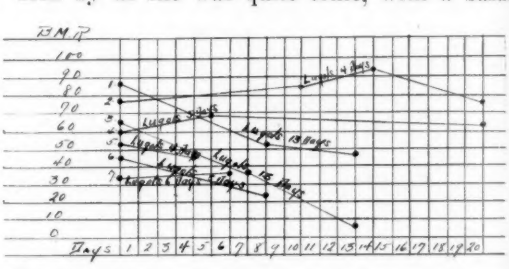

Chart II.—This chart shows the changes in basal metabolic rate in seven cases of adenoma with hyperthyroidism following the administration of Lugol's solution.

metabolic rate of plus 52 per cent and a basal pulse rate of 100. The iodine was discontinued and one week later the metabolic rate was plus 67 per cent but two weeks later dropped to plus 49 per cent. Both superior thyroid arteries were then ligated; followed by a moderately severe reaction. Seven weeks later her metabolic rate was plus 58 per cent but after taking Lugol's solution for three weeks, it dropped to plus 28 per cent, at which time subtotal thyroidectomy was performed.

This patient received iodine for three months with but temporary improvement. Had it been given as a pre-operative measure only, ligation would probably not have been necessary. This conclusion seems justifiable from the satisfactory response to Lugol's solution after a long period of discontinuance.

Case 3.—K. P., a colored female, aged 35 years, was admitted to the University of Virginia Hospital, April 29, 1925, complaining

of weakness and palpitation of the heart. She presented the characteristic picture of a severe exophthalmic goitre, with a basal metabolic rate of plus 75 per cent. During the first week of iodine-therapy, the metabolic rate dropped to plus 49 per cent. One week later there was no further improvement, so immediate operation was decided upon. Approximately three-fourths of the thyroid gland was removed, following which she had a severe reaction. Microscopic examination revealed marked epithelial hyperplasia. Two weeks after operation the metabolic rate was plus 10 per cent. Although this patient continued to take small doses of iodine, she returned in three months with a recurrence of toxic symptoms and a metabolic rate of plus 43 per cent. The iodine was discontinued with definite temporary improvement, but twelve days later she became suddenly worse. An attempt was made to give Lugol's solution both *per os* and by rectum, but neither was retained. We therefore gave M. xx by hypodermic injection, but without result, and she died a few hours later.

This patient developed an early and severe recurrence while taking iodine. The crisis was probably precipitated by its being discontinued.

Pathological Observations Following Iodine Therapy

Rienhoff,[8] Cattell[9] and others have shown that there is a marked change in the gross and microscopic appearance of the thyroid gland following the administration of iodine in exophthalmic goitre cases. The most noticeable changes are—an increase in the size, and decrease in the vascularity of the gland; an increase in the amount and the staining reaction of the colloid; and also a change in the epithelium from high columnar to the cuboidal type.

In our series of cases we have noted similar changes, and in only one have we seen the marked hyperplasia usually found in exophthalmic goitre.

Discussion

The excellent results obtained by the pre-operative administration of Lugol's solution has aroused much interest in the general subject of iodine therapy in goitre. Undoubted harm may result by the indiscriminate use of iodine in cases of thyroid enlargement. Some of the dangers are—simple adenomata may become toxic; toxic adenomata, which do not respond uniformly, may become more toxic; and even in exophthalmic goitre, by its prolonged use, multiple operations may be rendered necessary and the prognosis made more serious. If patients are to have surgical treatment, it is essential that the operator see them before iodine therapy is instituted, since his primary impression should influence his decision as to the type of operation to be performed.

As iodine seems to be of curative value in only a small percentage of those so treated, and since the results from surgery are satisfactory in about 75 per cent of cases, there seems to be little justification for its use except as a pre-operative measure.

Conclusions

1. Iodine is a valuable therapeutic agent when used in the pre-operative treatment of patients with exophthalmic goitre.

2. Certain patients with toxic adenomata are made better surgical risks by the proper use of iodine.

3. We do not seem to be justified in using iodine as a curative agent in either adenomata or exophthalmic goitre.

4. Only in case of emergency should iodine be administered to a patient with hyperthyroidism prior to careful study.

Bibliography.

1. Plummer, H. S.: A preliminary report before the Association of American Physicians, June, 1923.
2. Pemberton, J. J.: Present Day Surgical Treatment of Diseases of the Thyroid Gland. *J. A. M. A.*, 85:1882, Dec. 12, 1925.
3. Lahey, Frank H.: The Use of Iodine in Goitre. *Boston Med. and Surg. Journal*, Vol. 193, No. 11, page 487.
4. Frazier, C. H., and Mosser, W. B: A System of Control and Treatment in Toxic Goitre. *Annals of Surg.*, Vol. 84, pages 51-57, July, 1926.
5. Graham, Allen: Exophthalmic Goitre and Toxic Adenoma. *J. A. M. A.*, Vol. 87, page 628, August 28, 1926.
6. Decourcey, J. L.: The Prevention of Post-Operative Thyrotoxicosis by Post-Operative Iodinization *Annals of Surgery*, Vol. 83, page 768, June, 1926.
7. Read, J. M.: The Use of Iodine in Exophthalmic Goitre. *Arch Int. Med.*, Vol. 8, page 747, Nov., 1924.
8. Reinhoff, W. F.: The Histological Changes Brought About in Cases of Exophthalmic Goitre by the Administration of Iodine. *J. H. H. Bull.*, Vol. 37, page 285, Nov., 1925.
9. Cattell—quoted by Chite, H. M.: Effect of Compound Solution of Iodine and Rest in Surgery of Exophthalmic Goitre. J. A. M. A., Vol. 86, page 105.

THE DIAGNOSIS AND TREATMENT OF EXOPHTHALMIC GOITER.*

By W. C. CAUDILL, M. D., Pearisburg, Va.

We are now passing through perhaps the most interesting period in the entire history of goiter. It is true that during the past few years much has been done to clarify the subject of goiter, but, nevertheless, there still remains in the minds of many physicians a great deal of confusion in the diagnosis and management of this complex malady.

Believing that at present the crux of the goiter problem is revolving more largely around that of exophthalmic goiter, I have chosen this phase of the subject for my discussion.

Exophthalmic goiter has been described as a constitutional disease, apparently due to an excessive, probably an abnormal, secretion of an enlarged thyroid gland showing diffuse parenchymatous hypertrophy. It is characterized by a high basal metabolic rate with the resulting associated manifestations, with a peculiar nervous syndrome and usually exophthalmos, and with a tendency toward the gastro-intestinal crises of vomiting and diarrhea.

The exact part played by the thyroid gland, and whether there is an excess or deficiency of iodine secretion, is still a debatable question. A theory of the action of the thyroid gland is expressed by Blumgarten as follows: "The thyroid gland controls metabolism probably by the elaboration of thyroxin. Physiologically speaking, it therefore controls the speed of function, such as the speed of cerebral activity, the speed of carbohydrate metabolism, the speed of practically all somatic functions. Chemically it controls nitrogen metabolism. There is a good deal of evidence to show, and Rogers has demonstrated experimentally, that the thyroid gland is the great sensitizer of the autonomic nervous system. It is generally agreed that the autonomic nervous system is an important factor in determining visceral function, and since the thyroid is the great autonomic stimulant the speed of visceral function is to a great extent dependent on thyroid activity. The thyroid also controls the iodine concentration of the blood."

Another interesting view in regard to iodine secretion is given by Plummer. He states, "that intensive stimulation of unknown source, acting on the entire gland, drives it to the point of producing an active agent, abnormal in quality as well as quantity, which in the tissues of the body causes all the phenomena of the disease. As the normal molecule of thyroxin, discovered in 1914 by Kendall, contains 65 per cent by weight of iodine, it was natural to speculate as to the possibility of an incompletely iodized molecule, and Plummer conceived the theory that the syndrome of exophthalmic goiter varies with the amount of a completely iodized molecule, and with the relative amount of the two molecules in the tissues. Iodine is therefore administered on the theory that it will completely iodize the molecule thyroxin."

Up until a comparatively short time ago the theory has been almost unanimously accepted that we were dealing with an excessive secretion of iodine in exophthalmic goiter. Mix states, however, "we must now admit that it is not due to an excess, but rather to a deficiency; else, how can we explain the relief that is obtained by giving iodine in the form of Lugol's solution to these patients? Years ago I noted, as many physicians have noted, that an occasional case of exophthalmic goiter alternated with myxedema. These cases used to be extremely hard to understand because apparently in earlier times they seemed to be alternations of excess of iodine metabolism with an insufficiency of iodine metabolism. From what we know at the present time it is easier to explain how the two conditions may be more or less coexisting simultaneously or consecutively. Myxedema is really a hypothyroidism; exophthalmic goiter is dysthyroidism with an iodine deficiency; both being iodine deficiency diseases, it is easy to explain how they may at times be associated in the same individual." To me, this theory seems to be the most rational. But it only serves to emphasize the fact that the etiology as well as the true pathology is still unknown.

The diagnosis of a frank case of exophthalmic goiter, when the cardinal symptoms—tachycardia, tremor, exophthalmos, and enlargement of the thyroid—are all present, should be readily and easily made. But, unfortunately, every case, and in my experience the majority of cases, do not present this ideal picture. There may be only one or two of the cardinal symptoms present, and in many instances symptoms simulating other diseases seem to predominate. The onset is rather acute. The clinical course is definite and pro-

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gressive, although with a tendency to remissions and exacerbations. The fact that the thyroid gland may or may not be enlarged, the usual presence of a thrill or bruit, the definite fine tremor, the presence or absence of exophthalmos, are symptoms well known to all. A peculiar stare is usually the earliest eye symptom noted. Loss of weight with increased appetite is a symptom of considerable importance. Vasomotor disturbances, such as flushing of the skin, excessive perspiration, visceral spasm in the stomach and intestines are some of the usual secondary signs.

It has been pointed out that gastric disturbance is often the first symptom complained of. We have recently had three such cases. Each patient came in seeking relief from indigestion, when a careful examination showed two or more of the cardinal symptoms of exophthalmic goiter, and in each case the basal metabolic rate was above plus sixty.

Tachycardia is the one symptom essential in the diagnosis of exophthalmic goiter. It is always present, the pulse rate varying from 100 to 160 or more. The patient often describes it as pounding of the heart. In the early or mild cases it may be noted only upon exertion. In some cases, although it may be present for a long time and the rate may be very high, the patient may complain of little or no symptoms of cardiac derangement. It is important to note that the tachycardia of neurosis subsides during sleep while that of exophthalmic goiter does not.

The most important and determining factor in the diagnosis is the basal metabolic test. By means of this procedure it is easy to rule out certain clinical conditions, such as, neurocirculatory asthenia, neurasthenia, and other conditions simulating hyperthyroidism, which do not show an increase in the basal metabolic rate. Since the final test in diagnosis so often rests upon the basal metabolic reading, it is doubly important that this be accurate. Pool says that "the technic is not simple, and even with the best of apparatus and the greatest care it is not always possible to detect that the patient is under tension and therefore not in a basal state. With all of the possible sources of error it is often necessary to make second observations before a dependable result may be secured. Better to depend on pure clinical judgment than rest secure on a doubtful laboratory result because it is expressed in figures. When, however, reliable and concordant results are secured, the metabolic rate is the most important single factor in the diagnosis of thyroid disorders."

The differentiation between exophthalmic goiter and toxic adenoma at times may be very confusing, since in both conditions the basal metabolic rate is increased. In adenoma with hyperthyroidism the onset is insidious and the course is variable, often extending over many years, so that when these cases—as a rule, benign adenoma in the beginning—become toxic, the patients are past early adult life. The toxicity as a rule in these cases is less severe than in exophthalmic goiter; a thrill and bruit are almost uniformly absent. Tremor is irregular and less marked. There is a definite tendency to hypertension; the diastolic pressure is sustained, and the pulse pressure is normal. In this connection it is interesting to note that Graham, of Cleveland, in a recent article, has endeavored to show that exophthalmic goiter and toxic adenoma are clinical varities of a single disease. His conclusions are as follows:

(1) We have been unable to recognize a single symptom or sign that is necessarily pathognomonic for exophthalmic goiter as opposed to toxic adenoma.

(2) We have been unable to recognize a single anatomic or histologic alteration in the thyroid, in either the adenomatous or the non-adenomatous portion of the gland, that is necessarily pathognomonic for exophthalmic goiter as opposed to toxic adenoma.

(3) There are equally good reasons for speaking of dysthyroidism in cases of toxic adenoma and exophthalmic goiter.

(4) There are equally good reasons for speaking of hyperthyroidism in cases of exophthalmic goiter and toxic adenoma.

(5) The degree of hypertrophy and hyperplasia of the thyroid determines the quantity of iodine that will be tolerated, without untoward effects, in both exophthalmic goiter and toxic adenoma.

(6) The reaction to iodine is fundamentally the same in cases of exophthalmic goiter and toxic adenoma.

(7) We have no alternative but to regard exophthalmic goiter and toxic adenoma as clinical variations of a single morbid state.

This tends to further emphasize our changing views concerning the present state of goiter.

The relationship between exophthalmic

goiter and pregnancy is very interesting. It has been stated that women with exophthalmic goiter rarely become pregnant, but that pregnant women often develop hyperthyroidism, which tends to subside soon after delivery. During the past year we have observed a number of cases in which the hyperthyroidism apparently grew worse after delivery. In one case vomiting and diarrhea that had persisted during the latter months of pregnancy continued several weeks after parturition. In this case the basal metabolic rate was plus 70, and the vomiting and diarrhea promptly checked upon the institution of iodine therapy. I think it is true that a great many cases do tend to subside following the termination of pregnancy, but, on the other hand, a great many cases, if left untreated, will go on to the state of hyperthyroid crisis.

An important side of the goiter problem, that has been studied most intensively for the past few years, is that of cardiac complications, and this constitutes the most common complication met with in all types of thyroid disease.

When serious cardiac damage is present, it is a dominant factor in both prognosis and treatment. The degree of frequency with which this complication is met is disagreed upon by many, but that it occurs sufficiently frequently to merit serious consideration in every case is admitted by all. The most common cardiac disorder is total arrhythmia and auricular fibrillation.

The authorities on the treatment of exophthalmic goiter are not of universal accord. That we are passing through a transitional period in the history of goiter is shown by the many recent and changing views concerning this disease. There will probably be as many new changes in the next few years. This may vitally affect the management of the disease, because the present treatment cannot be considered ideal. The ideal treatment of any condition is bound up in the removal of the primary cause; since this has not been determined in exophthalmic goiter, we must accept the best substitute, and this we believe lies in an early sub-total thyroidectomy in practically all cases. Early diagnosis and operation will produce a complete and satisfactory cure in the great majority of cases. Operations performed after a more prolonged period of intoxication produce results directly proportional to the extent of parenchymatous changes that have taken place. The earlier the operation the less is the danger and the more likelihood is there of complete recovery. The operative mortality of the surgeon who has perfected his technic of thyroid surgery to a high degree is exceedingly low.

Of equal importance to the skill of the surgeon and the technic of the operation is the anti-operative and post-operative treatment. This will vary according to the degree of intoxication, the age of the patient, and the amount of cardiac involvement. Rest in bed with proper attention to fluids and diet, and in some cases the employment of certain drugs, such as bromides, luminal, digitalis, and quinidin, are indicated. Glucose may be used to great advantage in some cases.

Foci of infection, which seem to act as an exciting or pre-disposing cause, should be removed in all cases. In the mild cases they may be removed before the primary operation. In the severe cases they should be left until after the primary operation.

The value of iodine and the method of administration, as outlined by Plummer, is too well known to be gone into in detail.

Suffice it to say that this one therapeutic measure has been the means of greatly reducing the mortality, cutting down the morbidity and rendering much less frequent the necessity for polar ligations and multiple-stage operations.

It must be remembered, however, that iodine is employed only as a preliminary treatment to thyroidectomy and not in any sense as a cure for exophthalmic goiter. Many warnings have been sounded, and I believe it is a timely admonition, that much harm is being done by the promiscuous use of iodine as a general therapeutic agent in the treatment of goiter. The same is probably true of iodine salt that is used after the age of puberty. Lahey, of Boston, says that "Medical practitioners should be urged not to administer iodine to patients before sending them to the surgeon."

BIBLIOGRAPHY.

1. Boothby, W. M.: Diagnosis and Treatment of Thyroid Disorders, Oxford Medicine, New York, Oxford University Press, 3:883-963, 1922.
2. Blumgarten, A. S.: The Endocrine Factors in Some Common Functional Diseases, Med. Clin. N. Amer., 1922, 4:1923-1066.
3. Plummer, H. S., and Boothby, W. M.: The Value of Iodine in Exophthalmic Goiter, *J. Iowa M. S.*, 14:66-73 (Feb.), 1924. Quoted by Pemberton.

4. Pemberton, John de J.: Present-Day Surgical Treatment of Diseases of the Thyroid Gland, *J. A. M. A.*, Vol. 85, No. 24, 1882-1886 (Dec.), 1925.
5. Mix, Charles Louis: An Exophthalmic Goiter of Peculiar Type, Med. Clin. N. Amer., 1926, V., 1255-1260.
6. Blumgarten, A. S.: Hyperthyroidism Without Goiter, Med. Clin. N. Amer., Vol. 9, No. 3, Nov., 1925.
7. Pool, Eugene H.: Exophthalmic Goiter. Surg. Clin. N. Amer., Vol. 5, No. 1, Feb., 1925.
8. Elliott, Chas. A.: Clinical Types of Goiter and Their Management, Med. Clin. N. Amer., Vol. 5, No. 6, May, 1922.

DISCUSSION OF PAPERS BY DRS. SMITH, BIGGER AND CAUDILL.

DR. WILLIAM H. HIGGINS, *Richmond:*—Dr. Smith in his paper has brought up an extremely practical point in that he is dealing with a type of case which is found not only occasionally, but a type which is coming into the hands of practitioners both in the country and in the city. For a long time this ill-defined clinical syndrome was looked upon as neurasthenia or hysteria and was treated accordingly with unsatisfactory results. Dr. Smith has described very clearly the chief symptoms which we ordinarily find associated with what is termed thyroid deficiency. They are familiar to us all—extreme nervousness, fatigability, sometimes dryness of the hair and skin, sometimes vague pains over the body, sometimes over-weight or under-weight, and always a lowered metabolism. These physical and metabolic changes have been attributed to two possible conditions. From studies made in recent years it has been thought that these changes are directly due to a true deficiency of the thyroid gland. Certainly this assumption is true in some of the cases, as the satisfactory result of thyroid feeding demonstrates an exhaustion of the gland itself.

We must not forget, however, that a low metabolic reading may result from factors outside of the thyroid gland itself. For example, it has long been known that pituitary insufficiency will show a low reading. Some changes in the gonads will cause a similar condition; also starvation and emaciation, as well as certain types of psychoneuroses, may produce a profound depression of metabolism. Obviously, thyroid medication would have no effect upon such cases whose lowered metabolism are due to the causes which I have just mentioned. In order that the treatment may be carried out effectively, it is necessary for us to separate these types etiologically and not group them all as hypothyroid states. In the last three years I have had the opportunity of studying about forty-five cases showing low metabolic readings. In approximately 85 per cent there have been associated certain definite major pathological lesions which accounted for at least part of the symptomatology. In other words, it has been rare in my experience to find a case of pure hypothyroidism that is not associated with some pathology elsewhere in the body. I, of course, do not refer to the prenatal type or to those cases in which the gland has been destroyed since birth. I think we must consider, then, what part these other lesions take in causing the low reading that we speak of. It is possible that the co-existing disease may indirectly depress the thyroid gland and thus bring about a low oxidative process. The fact that hypothyroid states are found so commonly at the time of the menopause is presumptive evidence that the ovarian deficiency has in some way produced hypoactive changes in the thyroid. Aside from this group, we not infrequenly encounter patients with a lowered metabolism who show no evidences whatever of a thyroid deficiency. The cause of the lowered metabolism in these cases is unknown, but the fact that they are not helped by thyroid therapy makes it probable that they are in no way similar to the type referred to above.

In my experience I have never been able to see any beneficial results follow the use of glandular feeding in patients having a low reading unless they showed one or more of the usual signs of thyroid under-activity. I would say that these signs are as follows: Dryness of the hair or dryness of the skin, sensitiveness to cold, fatigability and vague pains over the body. The term "vague pains" is rather indefinite, I admit; but when you examine a person who shows no other tangible evidence of disease than this one symptom, hypothyroidism should be considered. In those cases where there is an absence of these signs, I doubt if we are really dealing with a hypothyroid case, but rather with one of those conditions which produce a lowered metabolic reading independent of the thyroid gland.

DR. CARRINGTON WILLIAMS, *Richmond:*—Dr. Bigger has covered the ground so thoroughly in his paper that I can add very little. The apparent paradox in the use of iodine in toxic goitre in the last four or five years is explained, I think, by Plummer, some four or five years ago, who differentiated toxic cases into adenoma and true exophthalmic goitre. He believed originally that the use of iodine added to the toxic symptoms in toxic adenoma, while it was of real benefit in the exophthalmic type. Further experience has shown that there are cases of toxic adenoma which are greatly benefited by the use of iodine. This apparent contradiction has been explained by Broaddus, who has shown that certain cases of adenoma will also develop exophthalmic goitre in the same fashion as the gland without the adenoma. In other words, in one case you may have this mixed type of adenoma and true exophthalmic goitre. I am inclined to think that the cases Dr. Bigger reported that were helped by Lugol's solution were of that mixed type. We have found several such cases in our clinic. Our experience in the use of iodine coincides almost identically with Dr. Bigger's, though we use rather larger doses than he does. We believe that the improvement gained by the use of Lugol's solution in exophthalmic goitre is a very transient thing, and when once obtained we believe that we can never get it again; so, if Lugol's is administered to the case of exophthalmic goitre with the idea of improving that patient, a very valuable pre-operative aid to the surgeon has been lost when that case finally comes to the surgeon. Dr. Bigger reported several cases in which this occurred, and our experience has been just the same. Some cases refused operation at first, and when they finally came back the administration of Lugol's did not help them. If there is any doubt about the diagnosis, we would not hesitate to use Lugol's. We believe the use of Lugol's should be limited to hospital cases and that the indiscriminate use of Lugol's before these patients come to the hospital takes away from them one of the great aids in the operation.

DR. WARREN T. VAUGHAN, *Richmond:*—We have a curious situation in the treatment of thyroid conditions in that the surgeon has a great field for operation, the roentgenologist has a great field, and the internist has a field. Each makes claims, and

the claims in many instances are not comparable. In the field of surgery in particular (for this is a discussion really of the surgery of hyperthyroid states), I believe that Dr. Williams has brought out perhaps a most important point. Many of the surgical statistics are based on hyperthyroidism as such, without differentiation into exophthalmic goitre, toxic adenoma, and toxic adenoma with exophthalmic goitre. I believe that most of the surgeons will agree that the best results in surgery are obtained in toxic adenoma and that decidedly less good results are obtained in Graves' disease. In Dr. Williams' statistics for 1921, his Group 3 are exophthalmic cases, in which he obtained decidedly less good results than in Group 2, which were toxic adenomata. The Mayo Clinic, I dare say, reports a higher percentage of satisfactory end results than anyone else in Graves' disease, and they report only 45 per cent cured after a period of years.

I was speaking with an X-ray man not long ago, who said he was not sure of the present X-ray situation in the treatment of hyperthyroidism. Some cases appear to do well; others not so well. The question arises as to whether, with a clearer differentiation between Graves' disease and toxic adenoma, the answer would come more easily. In exophthalmic goitre, if, as suggested by Plummer and others and as Dr. Caudill has brought out, we are not dealing so much with a hyperthyroidism as with an altered thyroxin molecule, as contrasted with the increased output of normal thyroxin in toxic adenoma, we can see that the two diseases are entirely different and call for an entirely different method of treatment. Certainly at the present time the treatment of choice is operative. The question is whether, ultimately—when we come to know the exact cause of exophthalmic goitre—a primary disturbance of the gland, or an endocrine and autonomic imbalance with the thyroid disturbance as only a part of the general disease—this attitude may be changed.

If we are dealing with a poor thyroxin and need more iodine, why cut out more of the thyroid gland? They do better for a time, because we have cut down the supply of poor thyroxin.

The surgical results are better in toxic adenoma than in Graves' disease, because in adenoma we have an encapsulated gland which can be removed. In Graves' disease, when the gland hypertrophies again, unless the thyroxin has been changed back to a normal thyroxin, the symptoms are likely to recur.

I say this to show the present unsatisfactory state of our knowledge as to the cause of Graves' disease. Certainly for the present, operation is the treatment of choice, though just as good results are claimed for medical treatment. Medical treatment, however, is not alone the administration of iodine; it is rest, proper nourishment, a high-calory, low-protein diet, psychic protection and adjustment, removal of infectious processes, etc.

Dr. S. O. Black, *Spartanburg, S. C.*:—I am glad to have been present to hear the interesting and instructive papers by the various gentlemen this morning. I live down in the northwestern part of South Carolina, in the town of Spartanburg, which is situated in a section not endemic to goitre. During the past three or more years we have had 282 goitres, of which 72 were considered toxic and 210 were not.

In our country thyroid deficiency is not a problem. In fact, we have seen no case of cretinism and but three or four cases of myxedema which had not previously been operated. The normal thyroid secretion may be reduced in amount to a variable degree, and the resulting symptomatology will be myxedema or cretinism, depending upon the amount of the reduction. During the summer just past a portion of my vacation was spent with De Gurvain, Professor of Surgery at the University of Berne, in Switzerland. One morning he showed us some fifteen or more cases of cretinism, some of them thirty or forty years old, yet only three or four feet in height. They had almost no hair on their heads, their skin was thick and dry, their fingers short and stubby. They stood or sat with their mouths open and tongues out and walked with a shuffling gait. Almost without exception they had monkey faces, with their noses short and thick, their faces wrinkled. Their sexular apparatus was not developed, and they had little or no mentality. They were dullards. Some were full size in stature. Some could not speak, and some could say only a few words. In some of the cases the glands were absent or atrophied; in others the glands were large and nodular, filled with adenomas or cysts of variable size, as large as an orange or cocoanut.

My conception of myxedema and cretinism was not only made clearer and more vivid, but in many ways was completely changed, especially after he did thyroidectomy in three different cretins whose glands varied in size from an orange to a cocoanut.

Iodine is not a curative for goitre. It will prevent simple struma in adolescence. It is used as an aid in preparing the exophthalmic patient for operation, and it will go a long way towards controlling the nervous symptoms in post-operative or recurrent hyperthyroidism.

Excepting the parathyroids, the thyroid contains more iodine than any other organ in the body. Iodine is essential to the function of that gland, and it is presumed that the iodine molecule is split up and that the iodine is converted into what Kendall has termed thyroxin.

Simple goitre may be congenital, in which instance it is due to iodine deficiency. Such a child will do best at the seashore, where the air content of iodine is thirteen or more times greater than in the air above the sea.

In 1911 it was discovered in the fisheries of Peru that brook trout could be so crowded and fed as to produce goitre, yet if the fish were so raised and so fed and given a small amount of iodine they would not develop goitre.

Certain cases of diffuse colloid goitre will promptly subside in size under iodine administration; in others there will be no diminution though it be given over a period of months.

Iodine is supposed to cause a hyperfunction of adenomatous tissue, and hence in that type of goitre it is contraindicated. At the present time it is being extensively used as a substitute for ligation or hot water injections preparatory to thyroidectomy. It has resulted in materially reducing the number of these procedures, though we have recently had several cases upon whom we were afraid to perform primary thyroidectomy, notwithstanding marked drop in their metabolic rate. Even after simple ligation two of them manifested much reaction, as evidenced by a fast pulse, marked erythema of face or elbows, a high fever, and much vomiting. Had we performed the complete operation, I fear we might have lost two of them, notwithstanding they had taken thirty drops daily of Lugol's solution for from ten to fifteen days.

I know of no group of toxic cases in which it is worth as much as it is in the recurrent hyperthyroid. Six months after operation, the metabolic rate should have returned to normal, the pulse should have quieted, the pulse pressure should have reduced

itself, and the patient, in order to be well, should be free from distressing nervous symptoms. If such be not the case, then hyperthyroidism persists, and iodine will do much to improve that patient's general condition. It will carry him or her along comfortably, almost free from nervous symptoms, for a period of months; though it seems to us that to insure a more permanent benefit the patient should be reoperated and more tissue removed.

DR. VINCENT W. ARCHER, *University, Va.*:—From the roentgenologist's standpoint, we have noticed the great association of abscessed teeth with hyperthyroidism in our clinic at the University of Virginia. Whether this is cause or effect we do not know, and we are wondering whether the observations of some of the other surgeons are similar to the observations made by us. There are, of course, two factors there, one being the presence of a condition which depletes the body, the other being abscessed teeth, and we cannot tell whether either is cause or effect or coincidence. Naturally we would expect in this condition to get a lowered local resistance on account of the higher metabolism, and from the lowered resistance about the teeth, a dead tooth that would ordinarily not cause any trouble, might become abscessed. We are just wondering whether our observations are similar to those of others, or not.

CANCER OF THE CERVIX—ITS PAST, PRESENT, AND ITS FUTURE.*

By W. L. PEPLE, M. D., Richmond, Va.
McGuire Clinic.

Is radium just one more agent in the present day renewal of the age-old frontal assault on cancer? Or is it something more? How primitive have been our weapons in the past! Fire and Sword! How elementary our methods! No strategy, no flanking movements, no cutting in between the enemy and his base of supplies. No blockade to deprive him of the sources of life. No propaganda to make the surrounding inhabitants so hostile that they will turn upon the invader and destroy him.

No, there have been none of these. Of course, there have been plans to these ends; volumes and volumes of plans, but they have all failed. So, in the end, we have gone back to first principles, just brutal frontal attack with fire and sword, and now a new mysterious ray is added to our armament. That seems to be all.

If one is anxious to find out his weaknesses, his faults and his limitations, just let him study intimately any one problem of his daily routine and he will be duly rewarded.

Cancer of the cervix has always been intensely interesting to me, but it has been utterly bewildering as well. When I go to medical meetings and hear the statistical end-results of these cases, with surgery, by other men in other places, that so far surpass my own, or those of other men in my immediate vicinity, I begin to think that climate or latitude or altitude or distance from the sea or some other mysterious factor, of which I know nothing, must be at work to militate against me and my immediate neighbors. Had surgery given me 20 per cent, 30 per cent or 40 per cent cures in cancer of the cervix I am afraid I would not have been in a hurry to look for other methods of treatment. But all of mine died! If not soon, later, but the same fate overtook them all—they died!

And so I began to wonder if our cases were worse than other peoples' or if we were getting them so much later than other people, and if so, why? With this end in view, I went to Dr. S. W. Budd, of our staff, whose cases were earlier than mine, and we took fifty cases of cancer of the cervix treated by radium and decided to analyze them and see what kind of cases we were getting, and what results we were getting with them, and what could be done to make these results better.

The first thing we did was to make a chart of every item of information that every patient's record ought to show. Then we took the records and began to distribute the items under their proper headings. Now, here is where the first shock came. When we looked at that chart, the staring blank spaces where essential facts were missing was disheartening. Most of the histories were good, and many very full, but even these often lacked the very vital things we wished to know. It was obvious that the only way to take such histories was to have a card or chart as a guide so that no item of importance would be missed, and that the same facts in the same terms would be recorded in every case. Then, and then only, can we make accurate worth-while comparisons and possibly draw helpful, useful deductions. Around this idea we drew a card or sheet as a guide for the history taker. In addition to this function, it is an abstract of the patient's history and is kept in addition to the regular full record. It is a summary of every vital essential of the case, for locating and following up its progress in detail to its termination in cure or death. One side of the card is statistical and has to do with identification so that a proper follow-up may be had.

The exact kind of growth to be treated, the

*Read at the fifty-seventh annual meeting of the Medical Society of Virginia, in Norfolk, October 12-15, 1927.

kind and number of treatments given, and their results, local and general, expressed in as exact terms as possible from treatment to treatment, from time to time, and from year to year. Our general plan of procedure is as follows:

The diagnosis is made and confirmed by microscopic examination, the classification of Broders being followed. The specimen is obtained before operation or at the operation, preferably before. No case is recorded as cancer unless it is confirmed microscopically. I have seen one case of tuberculosis and two of malignant granuloma of the cervix which simulated cancer in every other way and might readily have been put down as cures of cancer had not the microscope revealed their true nature.

Under general anesthesia, unless there is some positive contra-indication, the growth is thoroughly destroyed with the cautery. Our reasons for doing this are, that prior to the advent of radium, heat was our most effective agent in treating cancer of the cervix. In following the diseased tissue with the hot cautery tip, it often reveals a far more extensive invasion than surface indications would have led one to expect. By getting this mass of diseased tissue out of the way, we can introduce our radium more deeply into the neutral zone where its task has been made less formidable, so to speak.

We also, by the burning, rear a barrier of leucocytes around the neutral zone which we believe to be a potent factor in resisting or overcoming the cancer cells. We usually employ a 50 mg. capsule, protected in the usual way, low in the cervical canal, and four needles aggregating 25 mgs. plunged as follows: two outward in the direction of the broad ligaments, and one in the anterior and one in the posterior lip, if the disease is uniformly distributed. If one lip is involved to the exclusion of the other, both needles are plunged into it. The lateral needles are directed outward in close proximity to the uterine arteries with a view to strangling or blocking them, tying, if one may put it so, a radium ligature about them. Plain gauze packing is now applied to maintain the radium in place and to balloon out the vagina so as to hold the bladder and rectum as far away from the radium as possible. Leaving this in for 24 hours gives a dosage of 1800 mg. hours. Our plan is to repeat this twice more at intervals of four weeks. Seldom is it necessary to do a second cauterization, and rarely do we give a second anesthetic.

The contraction of the vagina and the retraction of the cervix often make the second and third applications difficult, but by patience and care we somehow manage it.

The intervals between treatments is arbitrary in a way. One waits for the reaction to subside before giving another dose. In some of the foreign clinics a three week interval is employed.

As one becomes more and more familiar with the use of radium, the conclusion is inevitably reached that whatever good is to be gotten by radium must be accomplished by the first smashing hammer blows. Recurrences later on will not respond one-half so favorably to even larger doses. Cures, if attained, must be gotten in the first big effort.

As will be seen on the card, there are places for six treatments. Some have required more than this, but our plan is to give, at least three, more if necessary. At the time of the first treatment, the patient's local condition, expressed as Class I, II, III or IV, signifying degrees of involvement, is set forth. At each subsequent treatment the local improvement, or lack of it, is noted.

Every patient is directed to report to her family physician for examination at least once a month for the first six months and once in two months for the next six months. We ask for a letter at the end of each quarter which we get from the referring physician. When patients come back to the Clinic, we examine them, record the local condition, their weight, their red cell count and hemaglobin estimate. At the end of each radium year we make an effort to get this information in detail either from the physician in charge or by a visit to the Clinic. In cases that go bad we try to get as accurately as we can the length of time the temporary improvement lasted before she began to break and go down hill. When death occurs we try to find out its immediate cause, especially as to evidence of local recurrence or metastases elsewhere or from inter-current disease.

Now we turn to the other side of the card which is covered with questions carefully planned to lay a foundation for getting cases earlier and turning other side lights on the disease that may prove helpful.

In considering age and race, bear in mind that the Negro who was comparatively free

from cancer thirty years ago suffers almost as frequently as the white woman now. Next, is she married or single? Her social condition? Cancer is said to be more common among poorer women than among those who live a life of ease. Whether this is due to the hard work or to the less careful hygiene, or both, it is worth considering, and if it be a fact it should be established. Is she from the city or country? Skin cancer is more prevalent we know among farmers than in housed workers. I wonder if cancer of the cervix shows the same rural and urban curve? The number of children the patient has borne? The number of cancers in childless women? Is cancer a penalty of motherhood? Her weight? Has she gained or lost? Her red count and hemoglobin? Here we fix a picture for future comparison expressed in pounds, red cells and coloring matter that will remain and not be a matter of memory or conjecture. What is her general appearance? What symptoms made you seek relief? This question should be put in every way possible until an intelligent answer is obtained. How long have you had these symptoms? You may have to work like a lawyer to get an accurate answer to this question, but it is very important to see how long she waited after her warning. It is often a shockingly long time. Is your menopause established? Has your life changed? Just when was this? Are your periods irregular or abnormal? How long was it after your periods stopped before the symptoms that made you seek relief came on? Was there spotting after the menopause or between periods? Was leucorrhoea your first symptom? Have you been frequently or constantly troubled by it? All of these questions will bring out answers which will lead us to working for earlier diagnoses. Are there any accompanying diseases or conditions, such as syphilis, diabetes, tuberculosis or heart or kidney disease to militate against recovery?

Condition of the cervix on first examination? We have discarded the vague terms operable and inoperable, fair, bad and hopeless, and grouped them into four classes, as follows:

Class I is the slight ulcer or abrasion in which the microscope alone will make the diagnosis.

Class II is when the disease is definitely confined to the cervix but is macroscopically cancer.

Class III is where the cervix is completely involved and the local disease is encroaching on the vaginal mucosa; the broad ligaments may seem thickened, but the uterus is not fixed.

Class IV is where the disease has manifestly left the confines of the uterus, which is fixed, and hardened areas or masses are usually felt in the region of the broad ligaments.

This brings us to the last question. Is there evidence or history of a pre-existing lesion of the cervix?

In cases of Class III and IV the disease obliterates the tear in the cervix, so we try to find if there is a history of a tear or polyp or ulcer.

To sum up the past of cancer of the cervix, I would say that its diagnosis and treatment have been haphazard, empyrical and unscientific. The two greatest contributions to it in my judgment have been the cautery, as advocated by Birn, and the operation of Wertheim, —the first for its actual accomplishment, the second for what it aimed at, as well as what it achieved.

The present hope of cancer of the cervix lies, first, in a closer study of the whole question with a view to prevention and earlier recognition—a closer study of the cancer itself to ascertain the best method of treating it, and a closer study of the patient who has the cancer to get a measure of her resistance and to see if this can be increased. Finally, we may thus choose intelligently the best methods of treatment singly or in combination.

Our problem is to do better work with what we already have, by close, meticulous care to the minutest detail of every phase of the subject. With such agents and measures as we have, we can, for the present, hope to kill fewer and to cure more patients than in the past, and to make the rest of them live longer and more happily.

The cure of cancer lies still in some hidden test tube behind the locked doors of the laboratory of the future. We should not stand idly by to await its coming, but should quicken our energies to do our best until it comes.

I had intended writing a paper full of statistics, but our histories in the past have been too inadequate to make them of real value. Of the fifty cases in our series, seventeen have had their treatment five years or more. Of these seventeen, five, or about 29½ per cent, are still living. One still has the disease locally, and probably there are also metastases

in her lungs. One not included in the five lacked just nine months of the five year period when she died of apoplexy. She was clinically free of cancer at this time.

Now, before closing, I would like to answer several questions before they are asked. Do I operate on any case of cancer of the cervix? I do not, and as I feel now, I never expect to do another hysterectomy for cancer of the cervix. Do I ever operate when the patient seems to be cured—in that false dawn when there is no local sign of the disease left; in that golden age of increased weight and general well-being when the partially fixed uterus has become movable and everything seems good? No, I do not, but I have been sorely tried and tempted. I am determined to see it through on the old lines. Do I use deep X-ray therapy as an adjunct to radium routinely? No, perhaps I should, but I want to see for myself what radium alone will do. I use X-ray in the presence of demonstrable intra-abdominal lesions, but not as a routine.

This paper is not what I intended it to be, but it shows my hopes and ideals for the future, in which I earnestly beg your help in suggestion and criticism.

CHART CARD

Carcinoma Cervix	Date	File No.
Name	Address	
Referring Physician's Name	Address	
Husband or Nearest Relative	Address	
Pathological Report	Broders Type I-II-III-IV	
1st Treatment	Local condition	Date
2nd Treatment	Local condition	Date
3rd Treatment	Local condition	Date
4th Treatment	Local condition	Date
5th Treatment	Local condition	Date
6th Treatment	Local condition	Date
Condition on Examination	Or by Letter	Date
Condition on Examination	Or by Letter	Date
Condition at end of 1st year		
Condition at end of 2nd year		
Condition at end of 3rd year		
Condition at end of 4th year		
Condition at end of 5th year		
Length of time improvement lasted		
Died	Cause of Death	

Reverse Side of Chart

Age	Race
Civil Condition	Social Condition
City or Country	No. of Children
Wt. Gain or Loss	Red cells—Hmg.
General appearance of patient	
What symptoms made you seek relief?	
How long have you had these symptoms?	
Is your menopause established?	
Are your periods irregular or abnormal?	
How long was it after your menopause before your symptoms came on?	
Has there been spotting after menopause or between periods?	
Was leucorrhea your first symptom or warning?	
Have you been frequently or constantly troubled by leucorrhea?	
Are there any accompanying diseases or conditions?	
Condition of Cervix	Class I-II-III-IV
Is there evidence of history of pre-existing lesion of the cervix?	

Discussion

Dr. Joseph T. Buxton, *Newport News:*—This is a tragic disease, a disease that lays low the woman in the very prime of life. I have nothing but words of commendation for Dr. Peple's paper. He has handled the subject in a very able manner, and his conclusions are good. Strange to say, our mortality when operation is done is exactly the same; they all die.

Broadly speaking, cancer of the cervix may be divided into the inoperable and the operable. For the operable cases, we have the operation perfected by Wertheim, highly technical, requiring a great deal of surgical skill, and with a primary mortality of about ten per cent. I sometimes doubt whether I have the right to perform any operation carrying a primary mortality of ten per cent. In addition to this operation we have the measures mentioned by Dr. Peple. Radium treatment carries with it no mortality and, in the hands of experienced therapists, practically no morbidity. It does carry with it as high a percentage of cures as surgery, or higher. If we can take these patients who are down and out and whom death stares in the face, relieve the bleeding and foul discharge and prolong their lives for a few months or a few years, I think we have in our hands a measure which is worth while considering.

In quoting our mortality, I do not think we have a right to quote the mortality of some surgeon of

world-wide fame. Wertheim's mortality would be much less than mine, but he paid very dearly for his first hundred cases, for I think he had a mortality of about twenty-five per cent.

I want to make a plea for the early recognition of these cases. Dr. Peple has given you the mortality for the cases treated by radium in the early stages. If we can, by biopsy, make a diagnosis of cancer and subject these patients to radium in the early stages, we shall save many lives. I also want to make a plea to the obstetrician and general practitioner for more careful examination of their patients after confinement. We know that age and childbearing are very prominent in the causation of cancer, and I think we should be very careful to examine for tears and urge our patients to have lacerations repaired when found. In that way I think we shall go a long way toward preventing cancer of the cervix.

THE TREATMENT OF WHOOPING COUGH BY JENNERIAN VACCINE.*

By ST. GEORGE T. GRINNAN, M. D., Richmond, Va.

The treatment of whooping cough by vaccines or drugs has been very disappointing. There are vaccines on the market for the prevention and cure of whooping cough and reports vary greatly as to the value of such vaccines.

The specific vaccine for whooping cough should be less than one week old to be effective for either prevention or treatment of this disease. A supply of fresh vaccine with date of the preparation should be available for cases to be immunized. No such supply is now available except in large centres of population.

The observations of Gaston Pochon[1] in the treatment of whooping cough, if found successful by a large number of observers, will be of great value. Pochon noted that the "coceo-bacillus causing pertussis seldom remains in the sputum longer than three weeks. The serum of convalescent cases which have continued longer than four weeks is effective, if injected before or during the incubation period. If employed at the end of the incubation period, it renders the case less severe. It is inactive after the incubation period. Intra-laryngeal injections of ether, gomenol oil or adrenalin are useful in pertussis, not yielding to serums or vaccines."

Pochon confirms the conclusions of Dietrich that anti-variolar vaccine has proved a valuable resource in pertussis, but is not applicable to children who have been vaccinated or are resistant. If Jenner, in addition to preventing small-pox in 1870, cures pertussis 150 years later, Jennerian vaccine will become a greater aid to humanity.

For two years the writer has used Jennerian vaccination in all cases of pertussis, not vaccinated, as soon as the coughing paroxysms occur, or later. The Jennerian vaccine acts more effectively the earlier it is used in pertussis. In many cases, as soon as the pustule is formed, there is an immediate cure. The suffocation is relieved, the vomiting stopped and the whoop is not noticed. They sleep all night.

In some cases the severity of the disease was reduced 80%, the duration shortened. Such cases had suffered from whooping cough for five or six weeks. It was noticed that Jennerian vaccine was effective in later cases, but to a lesser degree.

One boy, aged 2, with a severe pertussis, seemed entirely cured as soon as the vaccine reached the pustular stage.

A girl, 8 months old, with a severe pertussis, was entirely cured in 10 days.

A boy, 16 months old, with severe pertussis four or five weeks and bronchitis complicating, was much improved. The older sister, aged 4, just beginning, was apparently cured as soon as the vaccination was pustular. In ten days to two weeks, there was a marked change in cases vaccinated.

The cases treated by Jennerian vaccine had never been vaccinated before. Pochon reports cases in which pertussis vaccined failed and Jennerian vaccination was successful.

Jennerian vaccine was only used in cases in which there was positive diagnosis, with a developed whoop, and the source of infection determined.

No explanation can be given for the reason why Jennerian vaccination relieves pertussis. The use of malaria to relieve paresis, and typhoid vaccine to relieve arthritis, the injection of milk to raise temperature and cure or benefit certain conditions, are now used. Salvarsan given to a patient does not mean that arsenic can be recovered in the spinal fluid.

More tests are needed to establish the true effect of Jennerian vaccination on pertussis before it will be generally accepted; this subject is presented with the hope that this simple treatment will be given trial by other physicians.

925 *West Grace Street.*

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*Read at the fifty-seventh annual meeting of the Medical Society of Virginia, in Norfolk, October 12-15, 1927.

1. Pochon, G. Med. Infantile Paris 30, 203, July, 1924.

DISCUSSION

DR. W. B. MCILWAINE, *Petersburg:*—This was first reported in American literature in 1924, and I reckon a good many of us read it and then forgot all about it. But Dr. Grinnan never forgets anything, and he tried it out. Of course, whooping cough in Virginia is not nearly the scourge it is in New York. When I was in the Willard Parker Hospital, we had whole floors full of it. Here in our state we do not have anything like the mortality they have in New York. Still we do have whooping cough with us all the time, and I expect to try this out. I hope all the general practitioners will sometime during the next year try this, make a record of their cases, and report back to Dr. Grinnan or to the Society; and if it is something good we can accomplish something here in Virginia. I do not, in my private practice, have much trouble with whooping cough, and I have had some good results from whooping cough vaccine. Why we get good results from vaccine or from the injection of milk or from a pustule we do not know; it has not been worked out. But practitioners should try these things that are simple and do no harm, and then let scientific men, laboratory men, work out why we get good results. I hope we shall try this out in Virginia, for it might be of value. Then we can get a large group of statistics and possibly make some little progress in the treatment of whooping cough.

DR. ROY K. FLANNAGAN, *Assistant State Health Commissioner, Richmond:*—I want to say for the State Board of Health that I hope you will not wait for a child to have whooping cough before it is vaccinated. There are so many babies, however, that are not vaccinated that I am glad to get this additional reason for having it done.

DR. ROGER H. DENNETT, *New York City:*—This is a very interesting observation, and I think that we did not pay enough attention to it when we first read about it. I congratulate the writer upon having done some work along this line. I, too, believe that too much theory interferes with clinical work and that anything new of this sort ought to be tried out. There are some difficulties in the way, however. In the first place, with us most of our babies with whooping cough will have been vaccinated, so that our situation might be a little different. There is a positive superstition among the poorer and more ignorant class of people in New York City about vaccination against smallpox; they feel it prevents almost anything. Of course, the Department of Health has fostered that superstition, because it aids in getting the people vaccinated. Most of the better class of poor people are vaccinated within the first six months of life.

The treatment of whooping cough with vaccines still rests on a far from scientific basis. I still have hope, after all these years, that vaccines of various sorts will come into their own. They certainly stand a good chance of so doing. I find that the prophylactic use of whooping cough vaccines is not very efficient; I find the children still have whooping cough just the same. So I give my patients the option of being vaccinated if they want to, but warn them they may have whooping cough just the same. In treatment, I see striking results, and I use the stock vaccine. It is put up in glycerin, just as is the smallpox vaccine; else it would not be stable. In many cases the results are striking; in other cases it does not help at all. Whooping cough is, indeed, a scourge in New York City. Every few years we have a fertile ground for whooping cough, and many children get it. Almost all the children who have not had whooping cough acquire it, and the mortality is very high. Pope (?) wrote an article some few months ago showing that the mortality in New York City from whooping cough is greater than that of scarlet fever and diphtheria put together. The complications of whooping cough are very fatal.

I think this is worth trying, and I am glad to have heard this paper.

DR. GRINNAN (closing the discussion):—I told this to a physician in Richmond who is about fifty years old. He said when he was a child his mother said they must be vaccinated. Her doctor said: "Hold on a while; they will get whooping cough, and when they do I will get a scab and vaccinate them and they will get along better."

CONSERVATION OF THE FUNCTION OF THE CERVIX IN THE TREATMENT OF CHRONIC ENDOCERVICITIS.*

By EDWIN L. KENDIG, M. D., Victoria, Va.

The unusual is generally more interesting than the ordinary. In medicine, however, the ordinary or common diseases should receive our best attention. It is stated by some that chronic infection of the cervix causes more loss of time and more inconvenience to those affected than any other gynecological condition.

In discussing the function of the cervix, consideration must be given to its anatomy and pathology. In discussing its function in connection with the treatment of chronic endocervicitis, consideration must also be given to cervical infection, the causative factor.

In embryo, the fundus of the uterus develops from the first part of Müller's duct and the cervix from the second part. These two make up what is known anatomically as the uterus.

The muscular layers of the cervix have a greater proportion of connective tissue than the fundus. This connective tissue renders the cervix firm and prevents easy dilatation or distortion of the cervical canal.

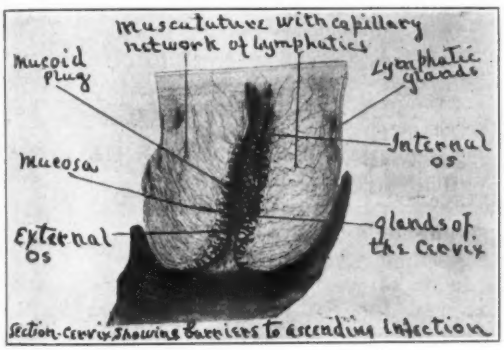
The muscular stability of the cervix and shape of this canal, with its ora, makes a strong and reinforced opening to the cavity of the uterus and renders the approach of bacterial infection from the vagina to the cavity of the uterus difficult.

The cervix mucosa is composed mostly of columnar epithelium with deep racemose glands. The epithelium of the lower part of the canal presents numerous papillae and gradually changes to a squamous epithelium as it approaches the external os. The epithelium of the upper two-thirds is ciliated, and in this

*Read before the Southside Virginia Medical Association at Norfolk, Va., December 14, 1926.

area the mucous membrane is provided with numerous deep glandular follicles which secrete a clear viscid alkaline mucus. This secretion under normal conditions forms a thick mucoid plug in the cervical canal, and assists in preventing the ascent of infection from the vagina to the uterus and fallopian tubes above.

The lymphatic structure of the cervix is important. The lymph passes from the mucosa through minute ostia directly to the muscular layers, reaching into every part of the musculature by an extensive capillary net, and later draining into collecting channels which course parallel to the larger uterine and ovarian blood vessels of the broad ligament. Considerable investigation has been directed to the lymph system of the human body to determine the definite physiological functions of these structures, particularly in relation to the invasion of the body by pathogenic bacteria. Waters* says, "To realize the importance of such studies it is necessary to consider only the fact that at every point where tissue surfaces are in direct contact with, and therefore exposed to the lodgment of, an infection by such organisms, they are abundantly supplied with lymphatic structure, which apparently serves as a first line of defense in preventing their entrance to the surrounding tissues and the blood stream." Hence the conclusion, that the abundant lymph supply of the cervix serves as a powerful defense against the pathogenic bacteria which find their way into the cervix.



Section cervix showing barriers to ascending infection

By some authorities it is thought that the cervix acts only as a passive communicating channel between the cavity of the uterus and vagina. If so, a large part of the anatomy of the cervix is useless. Functionally, the human body has a few useless parts. There is a purpose for this anatomical structure more than merely a communicating channel. The anatomy and function of the vagina makes certain its invasion by the various bacteria, including those of a pathological nature. Some of these bacteria find their way into the cervical canal. In the normal healthy woman practically no bacterial infection is found in the body of the uterus or in the fallopian tubes. It is said that the mucous membrane of the cavity of the uterus with its monthly menstruation is not very liable to infection of this nature, but the tubes have no such immunity. The ascent of bacterial infection from the vagina to the mucous lining of the uterine body and tubes is made difficult by the anatomical and physiological function of the cervix. The shape of the canal and its constrictions at the external and internal ora act partly as a barrier, and occlusion is completed by the ever present alkaline mucoid plug secreted in the upper part of the cervical canal. In addition to this, the well developed lymph system of the mucosa of the cervix does battle with those bacteria which become lodged in this canal.

It is concluded from the work of Curtis and other investigators that pathogenic bacteria, with the exception of gonococci, ordinarily will extend no further up the birth canal than the internal os. Extension of such infection up the birth canal, however, does take place when the cervix ceases to function normally, that is, when the cervix becomes pathologic. These pathological changes have their origin in acute infections which later become chronic. Erosion, catarrh, hypertrophy, cystic degeneration, and nabothian cysts of the cervix are the direct result of a chronic inflammatory process, brought about by this infection. The gonococcus, the streptococcus, the staphylococcus, and the bacillus coli communis are the chief offenders.

Lacerations, considered so important a few years ago, are now mainly recognized as one of the avenues through which, along with other injuries of the cervix, these infections enter. Under favorable conditions infection will invade the mucosa of the cervix. After overcoming such resistance as the lymphatics may offer, the bacteria take up their domicile in these structures and then follow the train of symptoms so common in endocervicitis. By establishing the infection in the mucosa of the cervix, the invading bacterial army advances its line of offense to a point of decided

*Waters, B. H.: Tice Practice of Medicine, Volume II, 569.

advantage. From this point, infection will enter the blood stream and produce to a greater or lesser degree systemic symptoms of focal infection. Infection will, unless removed, eventually overcome lymphatic resistance and be carried through the lymph channels to the structure in the broad ligament and other parts of the pelvis. The infection will, through inflammatory processes, distort the contour of the cervical canal, partly destroy the mucous lining of the cervix, replace the normal alkaline mucous plug in the cervical canal with the infected discharge of an endocervicitis and thereby open up a way for the direct advance of this invading bacterial army from the cervix into the cavity of the uterus and into the tubes.

For a half century or more gynecologists have been endeavoring to find some plan of treatment or some operation for the relief of a chronically infected cervix, but in the words Matthews,* "As yet no method has been discovered that is universally satisfactory." However, with a recognition within the last few years of its infective etiology, the removal of the infective areas is the rational treatment.

Taking into consideration its function and the probability of subsequent infections, the cervix should be left, after removal of infected areas, as nearly normal as possible. This may be accomplished by leaving intact the musculature and removing only as much of the infected mucosa and its glandular structure as will be necessary to eliminate infection. These infected areas are best removed by enucleation or by the use of a cautery.

A method of using the cautery consists of puncturing the cysts and striping, to the depth of the infection, the diseased mucosa with a small nasal or knife cautery, leaving a portion of uncauterized mucosa between the treated areas. The treatment may be repeated if necessary. It would seem that the portions of infected mucosa, left between these cauterized punctures and strips, would continue to give trouble. It has been found, however, that following this use of the cautery, these left-in-strips of mucosa in six or eight weeks grow over the cauterized areas, thereby reforming the mucous lining of the cervix, and that, except in severe cases, the infection in these left-in-strips usually disappears by the time healing is completed. These left-in-strips are no doubt sterilized by the direct effect of the heat of the cautery on the micro-organisms present, and by the stimulation of local phagocytosis and metabolism brought about by tissue irritation and better drainage. The result, if successful, is a cervical canal lined with healthy columnar cell or cervical type mucosa.

Severe chronic infection of the cervix may not successfully respond to this treatment and may require complete removal of infected mucosa with glandular structure. This complete removal may be done by cautery or enucleation. In complete removal by cautery there is danger of post-operative stenosis. The most satisfactory method of complete removal of the diseased mucosa of the cervix, with its deep glandular structures, is enucleation by the Sturmdorf operation. In this operation all of the infected mucosa and its glands are cored out with a knife and the raw surfaces are covered with vaginal mucous membrane.

Both the cautery striping method and the Sturmdorf operation conserve the musculature of the cervix, and leave intact the internal os. Cautery striping of the cervix in the treatment of chronic endocervicitis also conserves the contour and normal mucous lining of the cervical canal, which has the function of assisting in fighting back infection. In this respect this method has a decided advantage over the Sturmdorf operation. Enucleation by the Sturmdorf method removes at the time of operation all the infected area. In that respect Sturmdorf enucleation has the advantage of a more certain removal of the infection. These points should be borne in mind in determining the plan of treatment to be used.

In making a choice between cautery striping and the Sturmdorf enucleation in the treatment of chronic endocervicitis, the cases can be more easily considered in these general classes.

Conservation of function of the cervix is not necessary in some cases. Among them might be enumerated those with occluded or excised tubes, those well passed the menopause, and those having cervices so badly diseased and infected that there is nothing left to conserve. In such cases the probable result of the treatment and the general circumstances of the case should be the only determining factor in choosing between the two methods of treatment.

In cases with severely infected cervices, the Sturmdorf operation is the method of choice. It will be well to bear in mind, however, that

*Matthews, H. B.: **Journal A. M. A.,** November 27, 1926, 1802.

even in severe cases, cautery striping, which is simple and of little inconvenience to the patient, may be first tried and, if not successful, enucleation may be resorted to.

Cautery striping is the treatment method of choice in young and middle aged patients with mild or moderately severe chronic endocervicitis. The result of this method in these cases shows that in most instances it will remove the infection and conserve to the cervix a greater part of its original function.

Conclusions.

1. The cervix is not merely a communicative channel, but is a door between the vagina and cavity of the uterus, an important function of which is to battle against spreading infection from the vagina.

2. In the treatment of chronic endocervicitis, the complete removal of the infection should be given first consideration and the method of treatment adopted should be the one which will in the end accomplish this object.

3. In selecting a method of removing the infected areas of a chronic endocervicitis consideration should be given to conservation of the function of the cervix. Cautery striping and enucleation seem to offer the best methods of conserving this function. Of the two, cautery striping, when indicated, is the method of choice.

Bibliography.

Bruns, J. W.: *The Lancet*, Oct. 17, 1926, 806.

Corbus and O'Conner: *Journal A. M. A.*, Nov. 27, 1926, 1816.

Crossen, H. S.: Diseases of Women, 5th Edition, 432.

Culbertson, Carey: *Journal A. M. A.*, Nov. 27, 1926, 1808.

Curtis, A. H.: *Surgery, Gynecology & Obstetrics*, Nov., 1923, 657.

Davis, C. H.: *Surgery, Gynecology & Obstetrics*, April, 1925, 568.

Dickinson, R. L.: *Amer. Journal Obstet. & Gynec.* 1921, II, 600.

Kidd and Simpson: Oxford University Press, 1924.

Mann, B.: *Medical Journal and Record*, March 8, 1925, 358.

Matthews, H. B.: *Surgery, Gynecology, and Obstetrics*, March, 1921, 249.

Matthews, H. B.: *Journal A. M. A.*, Nov. 27, 1926, 1802.

Miller, C. Jeff: *Journal A. M. A.*, Nov. 20, 1926, 1695.

Moench, Laura: *Journal of Laboratory and Clinical Medicine*, Feb., 1924, 289.

Schline, Herbert H.: *Medical Journal of Australia*, June 7, 1924, 560.

Sturmdorf, Arnold: Gynoplastic Technology, F. A. Davis Co., 1919.

Waters, B. H.: Tice Practice of Medicine, Volume II, 577.

ELONGATED TRANSVERSE PROCESSES OF THE FIFTH LUMBAR VERTEBRA AS A CAUSE OF LUMBAGO.

By S. A. RHYNE, M. D., Statesville, N. C.
Davis Hospital.

There are numerous causes of backache or lumbago. A few of the most common are sacro-iliac joint strain, traumatic arthritis of the spine, neuritis of the posterior nerve roots and anatomical variation of the transverse processes of the fifth lumbar vertebra. It is the purpose of this paper to stress a few of the more important objective and subjective symptoms of the latter cause. When we consider the close proximity of the normal trans-

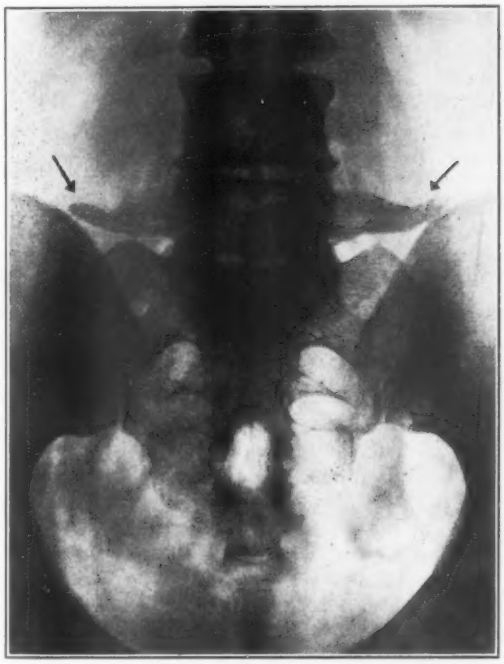


Fig. 1.—Case one shows the increased width and thickness of the transverse process of the fifth lumbar vertebra on the left with the sharp bony spur projecting from the lower border.

verse process of the fifth lumbar vertebra to the crest of the ilium and also the wing of the sacrum, it is easy to see that a very slight variation of the process of the fifth lumbar vertebra, either outward or downward, would in turn cause untold pain at the local site, in addition to referred pain up the lumbar region of the back and down the thigh and leg of the corresponding side. There are various causes of this variation of the bony parts, such

as trauma, congenital deformities and various bone diseases of the lumbar vertebra.

In differentiating this condition from the other types of backache, the X-ray is probably the most accurate means, but there are a few very characteristic symptoms that are almost invariably present. The patient is unable to stoop over or turn the body from side to side on the pelvis without excruciating pain, but can sit down straight very readily. These patients have usually suffered for some time and have usually exhausted all of the more common methods of treating backache. In the past year we have found in routine examinations several patients with this condition. I will now cite a few of the more typical cases.

Case 1. White, male, age twenty-four. Occupation, carpenter. This patient entered the hospital on June 29, 1926, complaining of pain in the left hip extending down the posterior part of the thigh and leg to the ankle.

Past History: Negative except for childhood diseases. Tonsillectomy three years ago, which was done in the hope of relieving pain which he was having in the hip.

Family History: Father living, age sixty-two years. Mother living, age fifty-eight. Three brothers and two sisters all living and enjoying good health.

Present History: Four years ago patient began to have sharp piercing pain in the region of the left buttock, which radiated down through the posterior and middle surface of the thigh. This pain was relieved by several days' rest in bed, but when the patient began moving around again the pain returned and has been more or less continual for the past three years. No drug seems to have any effect on the pain except opiates. The patient feels good at all times except for the suffering.

Physical Findings: Robust, stout, male individual. Weight 168 pounds. Blood pressure; systolic 125, diastolic 80. Tonsils removed three years ago. Throat clean. Teeth and gums in good condition. Thyroid not noticeable or palpable. Heart and lungs competent. Abdomen negative for any masses or tenderness. No present or past evidence of hemorrhoids. Laboratory findings were negative all the way through.

X-ray of the spine showed the transverse process of the fifth lumbar vertebra on the left side about twice the normal width and somewhat longer than the right side with a sharp projection from the lower and outer border which apparently was attached and resting on the crest of the ilium.

This patient was operated on June 30, 1926, under local anesthesia. The incision was made through the outer border of the erector spinae muscle and the outer part of the transverse process of the fifth lumbar vertebra on the left side removed. The patient had an uneventful recovery. He was discharged from the hospital July 11, 1926, and advised not to do any work for a month. On August 15th the patient was in to see us, feeling good. Had not had any recurrence of the pain. Had gained seven pounds. The patient resumed his work as a carpenter about August 20th.

Case 2. White, female, married. Occupation, house work. Patient entered hospital September 11, 1926, complaining of pain in back and both sides. The pain is referred down to the thighs and into the legs with excruciating pains in the calf of both legs but more marked on the left side. Pain is much worse after having been on feet all day.

Past History: Childhood diseases when young. Appendectomy five years ago. No complications. Began having pain in the back two years ago. The pain would be almost continuous for a period of a week or more at the time. Could be relieved by taking aspirin and resting at first, but for the last year the pain has gradually been growing worse. The periods of pain lasted longer and nothing relieved them except opiates. Rest in bed does not seem to give relief.

Present History: Patient admitted to hospital September 11, 1926. Temperature 98 degrees, pulse 86, respiration 18. Complains of pain in back and in both thighs and legs.

Physical Findings: Heart and lungs negative. Abdomen negative. Very tender over region of sacrum.

Laboratory Findings: Negative, except for urine which showed fifty pus cells to the field and faint trace of albumin.

X-ray of lumbar spine shows a very definite elongation of transverse processes of the fifth lumbar vertebra with the distal portion of the process of the left side resting on the crest of the ilium.

This patient was operated on September 22, 1926. The transverse processes were removed with the same technique as in Case 1. The pa-

tient left the hospital twelve days later, and at thirty days after operation patient was free from all pain.

Case 3. White, male, married. Occupation, works in glass factory. Patient came into office August 5, 1926. Chief complaint, pain in left gluteal region. Extends down left thigh and leg.

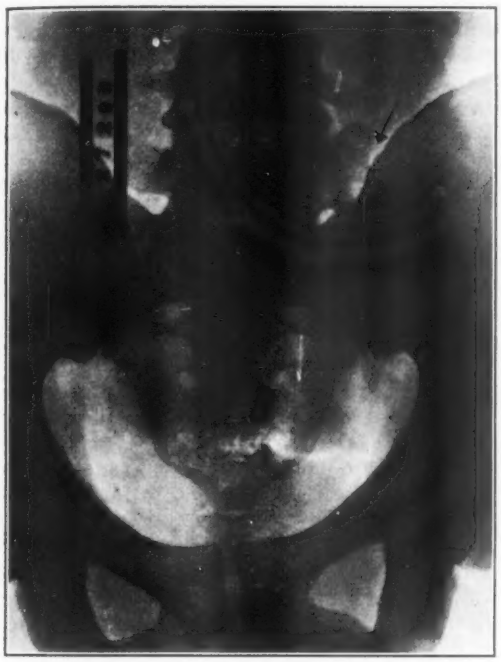


Fig. 2.—Case two described above shows a very definite lengthening of the transverse processes on either side of the fifth lumbar vertebra with an articulation of the extreme end of the left process to the posterior border of the crest of the ilium.

Past History: Negative.

Family History: Negative.

Physical Findings: Well developed individual, somewhat emaciated at the present time. Blood pressure 125/80. Teeth all out. Tonsils apparently not diseased. Heart and lungs negative. Abdomen negative. Very tender over left sacro-iliac joint.

X-ray of the spine shows the transverse process of the fifth lumbar vertebra on the left side elongated possibly one inch outward and downward, with an apparent articulated surface on the posterior border of the crest of the ilium.

Laboratory Findings: Urine negative. W. B. C., 10,500; polynuclears 82; lymphocytes 18; hemoglobin 85; R. B. C., 5,200,000.

Present History: Began having pain in back and region of left hip and thigh four months ago. Was treated for rheumatism for one month, then advised to have teeth taken out as they were somewhat diseased. Patient was forced to stop work one month later on account of the pain, and has not been able to do any work since then. The only relief he gets from the pain is taking an opiate of some kind.

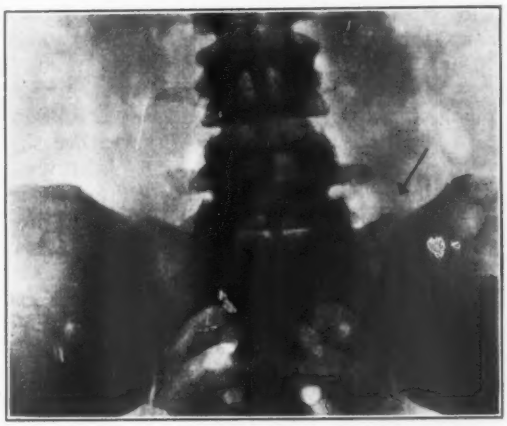


Fig. 3.—Shows a normal condition of the transverse processes of the lower lumbar vertebra. The arrow points to normal space between the transverse process, the wing of the sacrum and the crest of the ilium.

In view of his history and the X-ray findings, the patient was advised to come into the hospital for operation, which he did on November 18, 1926. Articulated surface of the transverse process of the fifth lumbar vertebra was removed from the left side under local anesthesia. The patient made an uneventful recovery. Left hospital November 28, 1926, greatly relieved from the pain. Two weeks later he came in for examination. Had gained six pounds since leaving the hospital. His pain in the back and hip had entirely disappeared. Patient was advised to return to work at the end of the third week.

THE TUBERCULOSIS SITUATION IN VIRGINIA.*

By CHARLES R. GRANDY, M. D., Norfolk, Va.

At the annual meeting of an organization of this kind it is customary for the President

*President's address at the meeting of the Virginia Tuberculosis Association, held in Richmond, February 18, 1927.

to open the session with a few more or less appropriate remarks, while the Executive Secretary gives the actual account of the work done during the past year, and the real address of the evening is given by a distinguished visitor from away.

I am, therefore, going to try to present to you a sketch of the tuberculosis situation in the State of Virginia, though I am not going to report exact figures but am merely trying to draw a picture that may be easily remembered by everyone.

To begin with, what is the magnitude of the tuberculosis problem in Virginia? In 1925 there were 2,715 deaths from this disease, giving us a rate of 118 which is more than 30 per cent above the rate for the Registration Area of the United States, which is 89. As some people prefer to think in dollars rather than in lives, it may be useful to put our statistics on a dollar basis. The Metropolitan Life Insurance Co. has computed that the State loses over $20,000.00 with each male death from tuberculosis. To be conservative we will take Homer Folk's standard and estimate these lives at $5,000.00 each which will show a loss of $13,575,000.00 from tuberculosis in 1925 in this State. So that, looked at from either standpoint, it is a problem worthy of our most earnest efforts.

Now let us see what is being done to remedy the situation. And, first of all, what general agencies have we at work on the problem?

a. There is the State Board of Health, with the Sanatoria and Bureau of Tuberculosis.

b. The local health organizations.

c. Voluntary tuberculosis societies.

Then there are various established procedures used everywhere in the fight against tuberculosis, which may be grouped as follows:

1. Sanatoria for the cure of early cases.

2. Hospitals for the care of advanced cases.

3. Clinics and nurses for finding cases of tuberculosis, and the care of cases which can not be hospitalized.

4. Preventive work, mainly for children, such as preventoria, nutrition classes, open air schoolrooms and general health work in the schools. As a part of each one of these groups we have the education of the people in regard to the disease.

We all agree that the State Sanatoria are running efficiently and the patients get as good results as they do in any other state. The question comes in regard to their size, for it has been recently shown by Drolet that the tuberculosis death rate in the various states is in inverse proportion to the number of hospital beds. It is also generally conceded as a rough measure that there should be one bed for each death from tuberculosis. The State of Virginia furnishes 535 beds in the white sanatoria, as against 1,299 deaths, and 146 beds in its colored sanatorium, as against 1,416 deaths. It can very readily be seen that the State Sanatoria alone can not properly provide for the problem, nor should they be supposed to do so as there should be various local hospitals to take care of advanced cases leaving the sanatoria free to take care of the early cases. To the State Sanatoria beds should also be added sixty-five beds in a private sanatorium at Salem, making the total close to 600 white beds.

When the West Act was passed and the Mill Tax was assessed for tuberculosis, it seems to have been the idea that the State Board of Health would take care of the whole problem and relieve the local communities. In this Act provision was made for the establishment of District Hospitals and Blue Ridge Sanatorium was built from this tax. It was furthermore agreed to pay for fifty absolutely charity cases out of this fund, though the number last year was reduced to forty.

When it comes to city hospitals, we only find one city with anything like proper provision for its white cases, Richmond having ninety-two beds at Pine Camp, though Danville has thirty-five beds at Hilltop Sanatorium which is run jointly by the city and voluntary organizations. Norfolk has about twenty beds for white people at the City Home. For colored people Richmond has thirty-three beds and Norfolk twenty. I have been able to find no other provision for tuberculosis cases in the State except for criminals and insane. This changes our figures somewhat, giving a total of 747 beds for white and 199 for colored people, which is better but still far below the number that we should have, as it represents a shortage of 552 beds for white people and 1,217 for colored.

The striking feature of this compilation shows that while the State is doing well for white and pretty well for colored, the cities and counties, with the exception of Richmond in the provision of white beds, are not in any way doing what they should for tuberculosis, and it seems utterly impossible to cope with the tuberculosis problem, especially in the col-

ored race, unless the city governments are awakened. This is even more markedly shown when we find that the cities of the State of Virginia have only appropriated in the neighborhood of $100,000.00 directly to the fight against tuberculosis and that Richmond has appropriated nearly $80,000.00 of this, leaving only a little over $20,000.00 for the remaining cities of the State. How much of this is due to the feeling on the part of the cities that they can pass the buck to the State Health Department is quite hard to estimate, though it is undoubtedly thought by many that the direct Mill Tax should take care of everything.

When we turn to the matter of clinics, we find that Richmond has for many years run one for white and one for colored, that Petersburg, Lynchburg, Roanoke and Portsmouth are running clinics with the aid of voluntary organizations, while a voluntary organization in Norfolk has long been running its clinic with the help of a small appropriation from the city. Other cities and counties of the State are apparently depending on the occasional visits of the traveling clinic run by the Health Department. I do not mean by this to disparage the excellent work done by these clinics, but feel that in the cities and thickly populated counties they are necessarily of a more or less temporary nature and should be relieved by the municipalities as soon as practical.

Though the tuberculosis Mill Tax was repealed by the last Legislature with the general revision of State taxes, the appropriation to the State Board of Health for tuberculosis work was increased about $14,000.00 a year, it being in the neighborhood of $291,000.00 at the present time. This with $100,000.00 the cities appropriate makes something less than $400,000.00 that the State and municipalities are giving each year to tuberculosis work, or less than 16 cents per capita. When we remember that the State is losing over $13,000,000.00 a year on deaths from tuberculosis, we can understand how utterly inadequate this total is and that it must of necessity be augmented by voluntary agencies.

When the West Mill Tax law was passed, it seemed to be its purpose to give the State Health Department authority over the whole tuberculosis work in Virginia. Thus, beside running the sanatoria, for which an extra appropriation is made, it had authority to establish District Hospitals; to pay all expenses for indigent cases; to establish clinics and to do all kinds of educational anti-tuberculosis work, which, as you see, practically covers the whole field. This special tax was supposed to raise enough money to provide for all types of work, for the Health Commissioner was given authority to spend on other forms of health work any surplus which was left at the end of the year after completing the work against tuberculosis. This very elaborate program has, however, never been attempted, and last year the Legislature took away the special Mill Tax feature putting the whole thing in the general budget.

There is, consequently, a very large part of the work in Virginia which is left to unofficial agencies which will have to attempt to fill in the gaps and get the State or the local authorities to take care of that part of the work still uncovered. What agencies are there in the State of Virginia to do this work? Beside the State Association, which fundamentally should be a federation of local associations for their common good, there are only two well-established continuously functioning local societies, the one in Richmond and the one in Norfolk, both of which were in existence before the State Association was founded. Beside these there are many Seal Sale Agencies for the most part doing very little beyond the raising of money by selling Seals at Christmas time, although a few of them are furnishing the local Health Departments with part of the money needed to carry on the clinics and nursing, while in Danville this money goes to Hilltop Sanatorium.

The Virginia State Association therefore has a very large field in the organizing of local tuberculosis societies which can co-operate with the existing authorities and help establish more efficient tuberculosis work in the various communities. This will in nowise interfere with the work of the State Health Department which with the recent change in the law is now certainly not in a position to carry out the elaborate scheme presented by the West Act. In so doing the State Association will no longer be merely an office for the sale of Christmas Seals, but will be able to do real constructive work all the year round.

We must not forget that the State Association is really supported by the localities through a percentage of the Christmas Seal Sale money, raised by them, and consequently owes the localities just that much service and should feel

the responsibility which the acceptance of this money places upon it. In other words, we should not feel that we have done a community a service by allowing Christmas Seals to be sold there but on the contrary that we are indebted to the community for the percentage of the Seal Sale returns which its puts into our treasury. When viewed from this standpoint, the Board of Directors of the State Association should be made up, as largely as possible, by representatives from the local societies, though I am not going to propose any basis of representation at this time but leave this for future consideration.

The State Executive Secretary should be primarily interested in the formation of local societies and in helping them carry out a useful program. In doing this there should be as much independent co-operation with the State authorities as is possible, for there is no need of conflict between these two organizations, but, on the other hand, the State can be served better by the two working hand in hand rather than by having the Association entirely subservient to the governmental department.

This is the attitude of the National Association, and the Virginia Association has made some attempt to carry out this policy, though hardly with the most glittering success. I feel, however, that if active local societies can be established all over the State, this co-operative work can be really effective, and that the State Department will then be very glad to accept the assistance which can be furnished in the various localities. Of course, it would be impossible to put this into effect immediately. It will take hard work on the part of an efficient executive who is well trained in all sides of the work, who knows tuberculosis from the actual handling of cases, and who has business ability enough to organize societies, as well as handle the Christmas Seal Sale. It is possible that we may have to get two people to divide these duties, but the returns from the Seal Sale should be large enough to finance this extra expense.

As we have seen, Virginia still has annually over 2,500 deaths from tuberculosis, while her death rate from this disease is well over that of the United States as a whole. The State Health Department while doing valuable work has found that it can not take care of the whole work in the State, and the local health authorities, as a whole, are not appreciating the call that tuberculosis should make upon them. There is thus a vast amount of work left undone which can be largely accomplished by voluntary effort. The State Tuberculosis Association has, therefore, the plain duty, first, of forming local societies in the cities and counties, and then of furnishing them advice and help in handling their local tuberculosis problems. Such a program does not interfere with the program of the State Health Department, but should be welcomed because the Association will take up that part of the work which it is impossible for one central organization to care for.

Bank of Commerce Building.

ABSCESS OF LUNG FOLLOWING TONSILLECTOMY.*

By J. W. DEVINE, M. D., Lynchburg, Va.

General interest in lung abscess dates back to 1912 when Richardson first reported lung abscess following tonsillectomy. It is now conceded that 50 per cent of the cases follow operations on the upper air passages and 75 per cent follow tonsillectomies. Lord reports ninety-eight cases of lung abscess following 227 operations on the upper air passages. In Hedblom's series of 692 cases 21 per cent were post-operative, while of these forty-eight followed tonsillectomies. Dr. Moore, in a statistical study of approximately 450,000 tonsillectomies, finds its occurrence about 1 in 2,500.

Cause

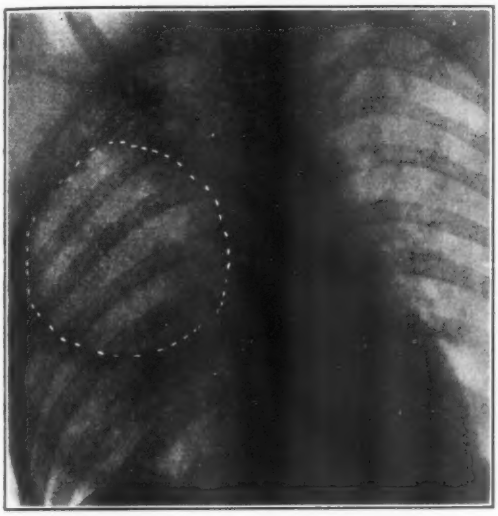
Abscess of the lung may be produced by aspiration, by means of blood stream, lymph channels, or by extension from neighboring structures. As the above statistics show, lung abscess is often preceded by operation on the upper air passages; tonsillectomy first, and then, in point of frequency, in the order named, operations about the mouth for cancer of the jaw, lips or tongue, and incision of peritonsillar abscess. Next in frequency is bronchopneumonia and occasionally lobar pneumonia, then septic infection following pyemia when a septic thrombus is set free in the venous circulation.

Location

In 60 per cent of the reported cases by W. F. Moore, abscess was found in the right or left lower lobe, right lower lobe 41 per cent,

*Read at the meeting of the South Piedmont Medical Society in South Boston, Va., November 17, 1926.

and left lower lobe 19 per cent. Attention is called by Wyman Whittemore to an important fact in the frequency of abscess occurring in the periphery of the lung. Of thirty autopsies at the Massachusetts General Hospital, twenty-eight were found in the periphery. Another



Antero-posterior view shows large cavity only.

important surgical point is that the visceral and parietal pleura are adherent adjacent to the abscess, making it unnecessary to use differential pressure; but it is almost impossible to be certain that adhesions have taken place. If you feel that they have not, then differential pressure anaesthesia or two stage operation should always be done.

Diagnosis must be differentiated from localized bronchiectasis, pneumonia, pulmonary embolism, encapsulated empyema, tuberculosis, and broken down malignant disease. This is accomplished by means of history, sputum examination, X-ray and physical findings. As Willy Meyer has said, "The roentgenologist is the thoracic surgeon's best friend", and there is no doubt in the case reported here that the location of the abscess by Dr. H. B. Spencer was indispensable in this case.

Treatment consists of adequate drainage of the cavity and dilated bronchioles. We have at our disposal postural drainage, bronchoscopic aspiration, the production of artificial pneumothorax and external drainage by thoracotomy. As to which of these we shall use depends upon the general condition of the patient, acute or chronic, and the location of the abscess. Postural drainage is done by inverting the patient completely with head hanging straight down to the floor, or by elevating the foot of the bed and changing the position of the patient from side to side. When there is communication with a bronchus, this may completely drain the abscess. The best position can be decided by ascertaining in which posture the most pus is expectorated.

Bronchoscopy should be used only by one skilled in the use of this method. As Drs. Miller and Lambert in a recent paper (*American Journal of Medical Sciences*, January, 1926) point out the discomfort and danger of this method in cases not properly selected, they do not favor bronchoscopy in abscess situated near the periphery of the lungs, and in those not communicating with a bronchus, but find it indicated in abscess near the main bronchi, especially in the lower lobe.

Artificial pneumothorax is a method in which drainage is attempted by pressure, but the danger of rupture of the pleura with a resulting acute septic empyema must be remembered. I do not feel that this is a very safe or satisfactory method.

This view (lateral position) shows fluid level in two pockets.

Thoracotomy is a method probably more applicable to the largest number of cases, and consists of resecting two or more ribs and walling off the pleura by the two stage operation under local anaesthesia. By this method

we are still confronted with the danger of a persistent bronchial fistula. Drs. Miller and Lambert in a large number of cases, after trying all other methods, found it necessary to operate on from 40 to 50 per cent of their cases. Their mortality in this series of cases following operation was 20 per cent.

Lateral view after postural treatment shows fluid in smaller cavity at lower level. Upper large cavity level same as before.

When rubber drainage tubes are used to drain these cavities, the position of the tube should be frequently changed, as there is grave danger of injury to the delicate blood vessels in the lung tissue, with resulting post-operative hemorrhage.

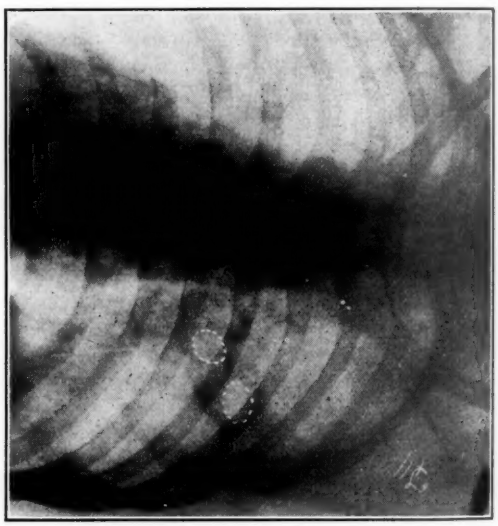
The writer wishes to present the following report of cases:

Case 1.—This patient was a child and the abscess was situated near the periphery. The fluid level of the abscess was determined, which made it an ideal case for thoracotomy. X-ray showed two distinct abscess cavities, a small one and a large one. The small cavity was in communication with a bronchus, and was very well drained by posture. The large cavity did not seem to be in communication with a bronchus. These facts were ascertained by putting the patient in different postures and making X-ray films. This is illustrated by the accompanying prints. As the patient was very septic and losing ground, operation was indicated.

Operation was performed three weeks after the patient was brought to the hosptial. Physical examination and diagnosis were made by Dr. F. M. Perrow. Thoracotomy was done under local anaesthesia with resection of about one and one-half inches of the fifth rib in the anterior axillary space. Two layers of the pleura were sutured over a circular area, and gauze was packed against the pleura for forty-eight hours; then needle was inserted into abscess cavity under the fluoroscope and cavity opened and drained.

Case 2.—Patient, girl, age six, with abscess of lung following tonsillectomy. This case was referred by Dr. Sam Wilson, of Lynchburg.

Case 3.—Patient, boy, age ten. This patient had been operated on for empyema about two years previous to my seeing him. Following that operation, his mother gave history of a sinus that continued to drain. The day I saw the patient, he had coughed up considerable blood and pus. X-ray showed a piece of rubber drainage tube which had sloughed into the lung and was in communication with one of the large bronchi. After removal of tube, the bronchial fistula finally healed. The child is now in good health.



Shows both cavities much reduced in size and practically empty.

BIBLIOGRAPHY.

1. Graham, Evarts A.: Surgical Clinics of North America, Dec., 1922.
2. Whittemore, Wyman: Surgical Clinics of North America, June, 1921.

3. Muller, George P.: Surgical Aspects of Lung Abscess. *Amer. Jour. Roent. & Radium Therapy.*
4. Jackson, Chevalier: Post-Tonsillectomic Pulmonary Abscess. *Atlantic Med. Jour.*, Feb., 1926.
5. Miller, James A. and Lambert, Adrian V. S.: The Treatment of Abscess of the Lung. *Amer. Jour. Med. Sciences*, Jan., 1926.
6. Myerson, Mervin C.: The Bronchoscopic Treatment of Lung Abscess. Nov., 1925.
7. Greear, Alvis E.: Lung Abscess. *Amer. Jour. Med. Sciences*, March, 1925.

610 *Church Street.*

ANGINA PECTORIS AND CARDIAC INFARCTION.

By J. MORRISON HUTCHESON, M. D., Richmond, Va.

In 1778, Edward Jenner, in a letter to William Heberden, called attention to having found coronary sclerosis and thrombosis in the postmortem examination of the hearts of two patients who had suffered from angina, and suggested that "it is possible that all the symptoms may arise from this one circumstance." Notwithstanding numerous and vigorous attempts to explain angina in other ways, the idea of a coronary basis has survived and the remark of Jenner just quoted expresses the attitude of a large number of clinicians today. It is, of course, agreed that symptoms of angina may and do occur without demonstrable vascular changes in the heart and that such changes are often seen in the hearts of those who never had pain. However, in the majority of patients who during life suffer from angina, the coronaries show definite pathology, and in many of these acute coronary occlusion with its clinical resemblance to angina has occurred. It is difficult, therefore, to escape the conclusion that, in a study of the individual case with angina, the pathological possibility of most importance is disease of the coronary arteries.

In comparatively recent years attention has been called to the rather characteristic clinical manifestations that accompany sudden obstruction of a main coronary or its branch. Most of these cases have been previously classified as angina. Coronary thrombosis was described by Jenner and has long been recognized at autopsy, but not until recently has any attempt been made to differentiate it clinically from the large group of cardiac cases with pain as an important symptom. That coronary thrombosis with resulting infarction can be diagnosed during life with a considerable degree of accuracy is now certain, and the ability to make this diagnosis represents a distinct advance in our knowledge of cardiac disease. While exact methods of observation and certain experimental studies have facilitated this forward step, it has resulted mainly from patient and thorough consideration of clinical data in their relation to postmortem findings.

Cardiac infarction is frequently the terminal event in patients who have suffered from angina or it may occur with little or no previous history of symptoms referable to the heart. The majority of attacks are fatal, though a considerable number recover. Of seventy cases observed by Christian, forty-five died in the attack and twenty-five recovered. The condition is usually the result of arteriosclerosis and so it may be expected in the later decades of life. It is comparatively easy of recognition if its salient features are kept in mind, and can usually be diagnosed without the aid of instruments of precision.

As in angina, the outstanding symptom in cardiac infarction is pain, though examples of both conditions are found in which pain is absent or insignificant. The pain of infarction may have the same distribution as angina but is more severe, more prolonged and not influenced by rest or nitrites. It is frequently confined to a location beneath the ensiform or in the epigastrium, and may be described as a sensation of terrific gastric distention. Dyspnea in infarction is an almost constant symptom and one of great significance. The slightest effort causes obvious air hunger out of all proportion to changes found in the lung.

The physical examination in angina shows nothing characteristic. In infarction there are usually signs of acute heart failure, rapid feeble cardiac action, weak first sound, falling blood pressure and crackling rales over the lung bases. Abnormal rhythm, particularly fibrillation, may occur. A transient pericardial friction is diagnostic but not often heard. Systolic murmurs are common but of no significance. Soon after infarction takes place, definite fever and leucocytosis are apt to be present.

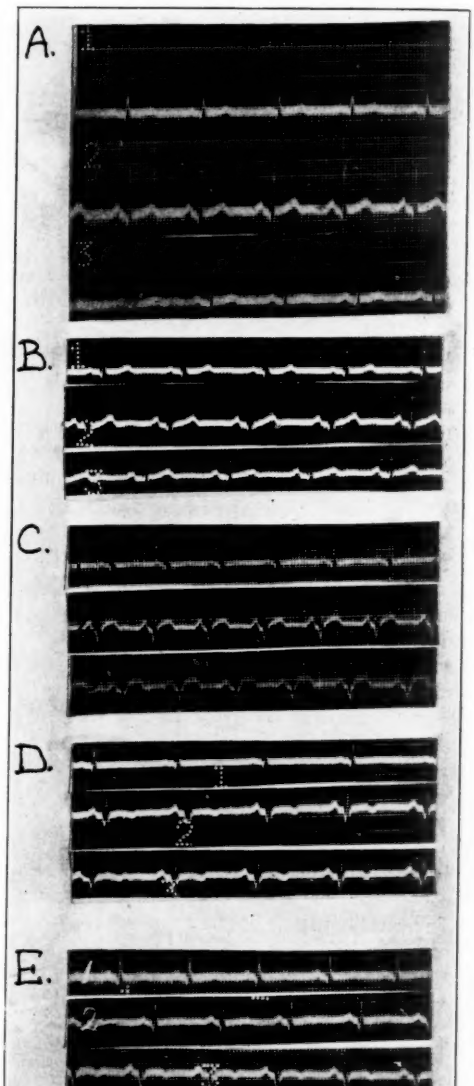
In differentiating cardiac infarction from angina due to other causes, the electrocardiogram is of great assistance. Unfortunately, it is not often easily available and if obtaining a record means disturbing the patient should be omitted. Changes in the ventricular com-

plexes are at times almost pathognomonic of infarction, and when previous records are at hand for comparison even very slight changes may be significant. As an abnormal ventricular complex is produced by a diseased area sufficiently large and so located as to disturb the normal conduction pathway, it is conceivable that infarction may take place without causing electrocardiographic changes. It should be remembered, too, that abnormalities in the curve caused by infarction are greatest soon after the accident occurs and that subsequently the record may become almost or entirely normal.

Perhaps the most unfortunate error that can arise in cardiac infarction is mistaking it for acute indigestion or for some lesion in the upper abdomen requiring emergency surgery, as the ensuing treatment is apt to dissipate the already small chance for recovery. Unquestionably such mistakes have been frequently made and have often gone unrecognized as the symptoms and signs of infarction have not heretofore been generally appreciated. The accompanying fever and leucocytosis have been particularly misleading, as they have been thought to argue for abdominal rather than cardiac disease.

Since the operation of cervical sympathectomy has come into vogue for the relief of angina, it is of additional importance that coronary thrombosis or infarction be recognized. Sympathectomy is of undoubted value in certain patients with severe and disabling pain but it does not prevent thrombosis nor is it a safe procedure in hearts already the site of infarction. As infarction is always a possibility in patients who have had angina, the accident may happen after sympathectomy, but the recognition of this type of pathology beforehand will prevent useless surgery and reduce operative mortality. It has been argued that the relief of pain by sympathectomy and consequent increase in the patient's activities may predispose to coronary accidents, and there is some ground for this view. On the other hand, if operation be undertaken where it is properly indicated, only for severe pain, the relief secured from the physical and mental stress of the attacks will in most instances more than offset the danger incident to increased activity.

As a considerable number of patients who suffer a cardiac infarct survive and may attain relatively good myocardial function, it is of the utmost importance that every assistance be given the heart during the critical period of impaired circulation. A proper understanding of what has happened is the first and most significant step in treatment. Seeing that the circulation has been cut off from a



A. November, 1924, prior to sympathectomy.
B. May, 1925, after sympathectomy. This and previous curve are entirely normal.
C. November 2, 1926, fourth day after infarction. Note marked changes in whole ventricular complexes.
D. December 16th—Change toward normal.
E. December 30th—Further change toward normal.

portion of heart muscle and that cardiac work must be carried on by the portion remaining, it is essential that the demands for work be reduced to a minimum. This is best accomplished by absolute rest with morphine in sufficient quantity to relieve pain. Cardiac drugs are of doubtful advantage. It has been stated that both nitroglycerin and digitalis are contraindicated, but opinion on the latter is divided. Christian prefers caffeine, but advocates great conservatism in the use of the "so-called cardio-circulatory stimulants."

Coronary thrombosis with infarction accompanied by clinical signs sufficiently distinctive to permit of its recognition is a rather common occurrence. In the past three years I have seen twenty-seven cases whose clinical manifestations pointed definitely to this condition. During the same period I have seen infarction twice postmortem in hearts that had given no characteristic evidence in life of its presence; but in both instances it might well have been suspected from the sudden onset of heart failure, in one case with auricular fibrillation.

In fourteen of the twenty-seven cases of infarction observed, electrocardiograms were obtained and all showed significant changes in the ventricular complexes, varying from a bundle branch block to inversion of the T-wave in leads one or two or both.

Of the twenty-seven cases, seventeen died in or soon after the attack, and ten recovered. In all cases followed, there has been an apparent lessening of cardiac reserve following recovery from infarction. One case in particular I have chosen to review in some detail as it illustrates most of the points touched on in what has been said regarding angina and infarction and also emphasizes the relationship of the two conditions.

A man, aged fifty-five, was referred to Dr. Coleman for sympathectomy in April, 1925. He had been under my care since 1921, having begun to have mild attacks of typical angina about 1919, following an operation on the prostate with resulting bladder infection. The latter condition cleared up entirely on treatment, but the attacks of angina continued and in 1924 became more frequent and more severe. There was a poor response to exercise but the heart was negative to physical examination and the blood pressure normal. In 1921 the orthodiagram showed nothing abnormal in the heart or aorta, but, as time went on, there was some increase in the size of the heart shadow. The electrocardiogram was always essentially normal. Early in 1925 a month's rest was advised, but this gave very little relief. Pain would occur on the slightest exertion and occasionally at night, and, as only temporary relief could be obtained from nitrites and other remedies, work had to be abandoned entirely.

Relief following operation was striking. Regular duty was resumed ten days later and there has been no return of the precordial pain radiating to left shoulder and arm. Occasional gastric distention with tightness in the chest was noticed, but this was relieved by rest or nitrites. The response to exercise as measured by the degree of dyspnea was apparently better than before operation.

On October 29, 1926, at 3:00 A. M., he was awakened from sleep by a severe pain in the pit of the stomach. This was described as a sensation of tremendous distention worse than anything previously experienced and accompanied by nausea, shortness of breath and weakness. Nitrites gave no relief and morphine very little. When he arrived at the Johnston-Willis Hospital about 5:00 P. M., the pain was still agonizing and he appeared extremely ill. The skin was grayish, rather than cyanotic, the breathing rapid, becoming difficult on the least exertion. The pulse was 108, blood pressure 104/80 as compared with 136/92 a month previously. The heart sounds were feeble, but no murmur or friction was detected. Fairly numerous cracking rales were heard over the lung bases; the liver appeared somewhat enlarged and tender. The temperature on admission was 98, but the following morning it had risen to 101, with a leucocyte count of 16,300. A hypodermic of morphine, grain 1/4, and atropine, grain 1/150, was given as soon as the patient was seen, and the morphine repeated within an hour. Following this, the pain gradually disappeared and did not return. By the fifth day the temperature was normal and leucocytes 9,000. A plan of absolute rest was instituted and kept up until signs of congestion in lungs and liver had disappeared. On November 12th, he left the hospital. There has been no further pain, but weakness and shortness of breath on exertion are more noticeable than before the accident.

Electrocardiograms taken at frequent intervals during his last hospital confinement showed some interesting changes. In place of the practically normal curve repeatedly ob-

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tained before and after the operation of sympathectomy, profound changes appeared in the ventricular complexes approximating incomplete bundle branch block. This type of record, as pointed out by Pardee and others, is characteristic of infarction. As the infarct healed, the abnormalities in the curve became less pronounced, the last record obtained showing only T-wave inversion.

This patient had typical attacks of angina, induced as a rule by exertion and relieved by rest or nitrites. These occurred with increasing frequency and severity for six years, accompanied by no other evidence of cardiac disease excepting dyspnea on exertion and, during the last three years, a moderate addition to the size of the heart shadow. That the attacks of pain were connected in some way with advancing coronary disease is strongly suggested by later events.

The result of sympathectomy was entirely satisfactory in as much as the operation was followed by a year and a half of much more comfortable existence than for four years previously. The limits of sympathectomy are, however, emphasized by its failure to prevent the coronary accident that later ocurred and, also, the pain of agonizing degree that accompanied it. Cardiac infarction in typical form with abdominal pain, acute heart failure, fever and leucocytosis, is shown together with the electrocardiographic changes that accompany this accident.

Professional Building.

METASTATIC UVEITIS.

By V. K. HART, M. D., Statesville, N. C.
From the Department of Head Specialties, Davis Hospital.

The above phrase implies an acute process. Such it is. It lapses, however, into a subacute stage and in some instances into a chronic iridocyclitis.

Uveitis, used correctly, means an inflammatory condition involving the iris, ciliary body and choroid. Therefore, there are synechiae, ciliary injection, choroidal cicatrices, vitreous opacities and deposits on the posterior layer of the cornea (descemetitis).

Inflammation of one or more parts of the uveal tract, originating from a source of infection, such as diseased tonsils or dental pathology, is not an uncommon occurrence. Moreover, an acute or chronic prostatitis, usually gonococcal but not necessarily so, manifests itself often by inflammation of the uveal tract. Syphilis very frequently gives rise to an acute iritis.

All the above are well known facts to eye men and most clinicians. Why, then, are the following cases presented? First, because all evidently originated in diseased tonsils or teeth. Second, because *every one presented a descemetitis as part of the uveitis.*

Objectively, the following positive findings were noted in every case: 1. Deep and pronounced ciliary injection. 2. A classical descemetitis—(punctate deposits on the posterior layer of the cornea, triangular in shape, apex upward, and involving largely the lower cornea). 3. One or more posterior synechiae. 4. Vitreous changes except in case five.

The first two cases showed scar tissue formation in the retina of the affected eye. If it was present in Cases 3 and 4, it could not be demonstrated because the retina could not be clearly seen.

These negative objective findings were recorded in each case: 1. Normal ocular tension. 2. No disturbance of nervous innervation. 3. Absence of diseased retinal vessels—(as far as could be determined in those cases with many vitreous opacities). 4. A negative physical examination except for bad teeth, or diseased tonsils. (Such included an investigation of the sinuses.) Other exceptions were an arthritis in Case 1 and a mitral valve lesion in Case 4. 5. A negative Wassermann. 6. Absence of gonorrheal history or findings.

When the tuberculin test is mentioned, the subcutaneous use is meant. One-tenth mg. was the first dose, and such was increased on alternate days until a dosage of 5 mg. was reached. If, in the interim, a severe systemic reaction occurred, its use was discontinued.

Case 1. Female, age fifty-six years. Emmetropic eyes by retinoscopy. O. D. acc. sph. plus .25 equals 20/20; O. S. light perception only. Presbyopic. The vitreous changes left were those described as "synchysis scintillans." Circumscribed area of scar tissue to nasal side right nerve. Apparently some such areas in left retina and occasional circumscribed pigmentation.

The outstanding feature of her physical examination was an arthritis of the chronic infectious type and some bad teeth. She had small, atrophic, imbedded tonsils of questionable pathology.

Her tonsils were therefore removed and she was put under a dentist's care. This was two and one-half years ago. Despite two follow-up letters, the patient has not been seen since. Her arthritis improved immediately following the above treatment, and the ciliary injection cleared.

Case 2. Female, age seventeen years. Retinoscopy: right, shadow unsatisfactory (vitreous changes); left moderate hyperopia. O. D. count fingers five feet; O. S. acc. sph. plus 1.00 equals 20/20 (mydriatic). The left retina showed an old, choroidal cicatrix in the lower outer quadrant and there were slight vitreous changes left. A tuberculin test was negative systemically and focally.

A diseased pair of tonsils were therefore removed. A dentist gave the teeth a clean bill of health. In six weeks the ciliary injection had cleared.

In one year her vision with correction was O. D. 20/20 minus 1; O. S. 20/20. This represents a definite improvement.

Case 3. Male, age twenty-one years. Retinoscopy showed a moderate, compound, hyperopic astigmatism O. D. acc. sph. plus .75 cyl. plus .25 @ 180 equals 20/70. O. S. acc. sph. plus 1.25 cyl. plus .25 @ 90 equals 20/20 (mydriatic). The vitreous changes were limited to the right eye.

Therefore, a diseased pair of tonsils were removed. He was referred for dental advice, but no outstanding trouble was found.

At the end of eighteen months there is still slight ciliary injection. O. D. count fingers at three feet; O. S. 20/20 with correction.

Because of his chronic iridocyclitis, which has recently given rise to lenticular changes, a tuberculin test was done. It was discontinued after the administration of one mg. because of a severe systemic reaction (temperature 102). However, there were no definite changes in the eye (increased ciliary reaction, pain, intraocular hemorrhages, etc.) The latter (focal changes) are of the utmost importance in diagnosis. The former (systemic reaction) is of little value. The writer has obtained in a robust nurse a very severe systemic reaction after one-half mg. Therefore, the test was considered negative.

Case 4. Male, age twenty-nine years. No gross refractive error. Right vitreous hazy but no definite opacities. O. D. 20/70; O. S. 20/20.

The tonsils were small and atrophic but their removal was advised because of a rheumatic history and a mitral valve lesion. Patient refused operation. Dental advice was directed because of several suspicious teeth.

The eye very materially improved after local treatment and dental care. The patient disappeared after two months of treatment and has not been heard from for a year.

Case 5. Female, age twenty-eight years. By retinoscopy, a bilateral, compound, hyperopic astigmatism of moderate degree was noted. O. D. ac. sph. plus 1.75 cyl. plus .75 @ 90 equals 20/30 plus; O. S. sph. plus 2.00 cyl. plus .25 @ 90 equals 20/20 (mydriatic). There were no vitreous changes in the affected eye (right). Retinal lesions were absent.

During the acute stage of the right eye, the patient had a subacute tonsillitis. Operation was, of course, advised, particularly because there was no apparent dental pathology. Operation was refused.

Under local treatment the eye cleared in three weeks. The proper glasses were fitted and the patient discharged. She has not been seen in over a year.

Discussion

During the same period of time a number of cases of luetic iritis were observed. Also several cases of scleritis or episcleritis of focal origin came under observation. A number of cases of iridocyclitis incidental to trauma or foreign body have also been observed, a few complicating some ophthalmic surgical procedure.

In very few of these, however, was there a descemetitis of any degree, though DeSchweinitz says it occurs in some form in all cases of iridocyclitis. When present, it was not in the triangular shape before mentioned, or so definitely punctate. It suggests the actual presence of organisms in the cornea and, therefore, a true metastasis in contradistinction to a toxemia *per se*. Of course, with every infection, there is some toxemia.

Proper local and general therapeutic measures were instituted in each case. The discussion of the same is not pertinent.

Summary

1. All cases in addition to the usual signs of inflammation of the uveal tract showed triangular punctate keratitis (descemetitis).

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2. Cases 1 and 2 showed retinal changes.

3. Cases 1 and 2 recovered after removal of tonsils and dental attention. Case 3 lapsed into a chronic state despite such care. Case 4 recovered with dental attention only. Case 5 recovered with neither removal of tonsils nor dental care.

4. Venereal and tubercular findings were absent in all cases.

BIBLIOGRAPHY.

1. DeSchweinitz, Geo. E.: Diseases of the Eye, Ed. 9; Phil. and London, W. B. Saunders, 1921, 350-356.
2. Irons, Earnest E., and Brown, E. V. L.; Recurrence of Iritis as Influenced by the Removal of Infections. *J. A. M. A.*, Oct. 9, 1926, Vol. 87, 1167-1172.
3. Zentmayer, William: The Prostate as a Remote Focus of Infection in Ocular Inflammation. *J. A. M. A.*, Oct. 9, 1926, Vol. 87, 1172-1176.

MYXEDEMA: THYROID INSUFFICIENCY SYNDROMES.

Report of a Far Advanced Case, Presenting Most Conspicuously Gastric Symptoms.*

By EUGENE L. LOWENBERG, B. S., M. D., Norfolk, Va.

William Gull[1] in 1873 called attention to a disease with a distinctive group of symptoms, which later became known as myxedema. In spite of great interest in the disease since Gull's article, and the accumulation of a vast amount of literature, cases of myxedema continue to be more frequently unrecognized than recognized and allowed to go from place to place in search of help, in many instances treated for such conditions as "anemia" or "nephritis." This fact may possibly be explained by the relative infrequency with which the average practitioner encounters the disease.

A typical case of myxedema is unmistakable, providing the condition enters the physician's mind as he makes the routine examination of the patient. Ord's[2] description, as given by Osler, is classical. There is a marked increase in the general bulk of the body, a firm, inelastic swelling of the skin, which does not pit on pressure; dryness and roughness which tends, with the swelling, to obliterate in the face the lines of expression; imperfect nutrition of the hair, local tumefaction of the skin and subcutaneous tissues. Perspiration is often much decreased. The physiognomy is altered in a remarkable way. The features are coarse and broad, the lips thick, the nostrils broad and thick, and the mouth is enlarged. Over the cheeks, and sometimes the nose, there is a reddish patch. There is striking slowness of thought and action. The memory becomes defective, the patient grows irritable and suspicious. There may be headaches and constipation. In some instances there are delusions and hallucinations. The gait is heavy and slow. The temperature may be below normal. The patients often suffer in cold weather. Albuminuria is usually present; the thyroid gland is diminished in size; the basal metabolism is reduced 20 to 40 per cent below normal.

Osler says "the diagnosis of myxedema is easy as a rule." This assuredly is true if the condition occurs to the mind, but in every series of cases reported in the literature of late, a large percentage had been seen by physicians and had gone undiagnosed for years. The general aspect of the patient suggests nephritis, or pernicious anemia, but the solid character of the swelling, the excessive dryness of the skin, the low temperature, the loss of hair, the dull, listless mental state, the low basal metabolism, the usual normal kidney function test serve to differentiate the former; while the absence of increased urobilin in the urine, glossitis, and of embryonal red cells in the blood picture rule out the latter. The chronic nephrosis of Epstein, to be mentioned later, is apparently closely allied to myxedema. The most important single factor in the diagnosis of myxedema is the low basal metabolic rate. Chaney[3] in 1924 pointed out that in cases of myxedema the tendon reflexes produce such slow movements that this quality can be recognized without the aid of mechanical devices, and that similarly a greater stimulation is necessary to elicit a tendon reflex in a myxedema patient than in a normal person. Thacker and White[4] in a recent article report fourteen cases of myxedema showing a characteristic electrocardiogram. There was a consistently low T wave in lead 2, and a general decrease in potential of all electrocardiographic deflections in all leads. According to these authors this "low potential" is found in one other condition—that of myocardial exhaustion due to serious coronary sclerosis. The inference is that the heart action is sluggish in myxedema. Thacker and White felt that there is a distinct parallelism between the

*Read before the Norfolk County Medical Society, November 15, 1926.

T wave of the electrocardiogram and the basal metabolic rate in hypothyroidism.

Though the classic picture of myxedema may be readily recognized, the literature of the past few years describes many cases of hypothyroidism with less characteristic symptoms and signs—cases suspected and diagnosed with greater difficulty. These cases may be divided into three groups:

1. Cases presenting most conspicuously a severe anemia.

2. A less definite clinical type characterized by fatigability, hypotension, pains and neuroses of various forms.

3. The chronic nephrosis of Epstein.

Of the first group. Unverricht[5] in 1923 mentions a group of anemias with, clinically, only presumptive symptoms of hypofunction of the thyroid, in which the erythrocyte counts were from 3,030,000 to 3,780,000, and the hemoglobin from 48 to 56 per cent. He reports an improvement in blood count on thyroidin treatment. Baker[6] in 1924 and Warfield and Green[7] in 1925 report cases showing a relation between thyroid deficiency and an anemia resembling chlorosis.

In a very recent paper Mackenzie[8] reports three cases, the outstanding feature of each of which was a severe anemia, the cases being diagnosed as pernicious anemia until the basal metabolic rate and the urobilin excretion were determined. The most conspicuous symptoms in these cases were weakness, sensitiveness to cold, decreased perspiration, paraesthesia and coldness of the hands and feet, palpitation and dyspnea on slight exertion. Two of the cases had only slight characteristics of myxedema. One of these cases showed an absence of free hydrochloric acid in the stomach contents. All three cases recovered under thyroid therapy. It is evident, therefore, that a pronounced anemia, either chlorotic in type or suggestive of pernicious anemia may be present in myxedema, while the usual characteristics of myxedema itself may be wanting.

Of the second group, Lawrence[9] in 1925 mentions thirty patients seen in the Evans Memorial Hospital Clinic, none of which had the features usually associated with myxedema, but in whom the laboratory findings were identical with those of myxedema, and the results of treatment with thyroid so striking as to leave no doubt as to the etiology of the cases. These cases were characterized by symptoms of fatigability, irritability, depression, bradycardia, subnormal temperature, hypotension, lymphocytosis. The author warns, however, that such cases are not to be diagnosed and treated as thyroid insufficiency unless the basal metabolic rate is definitely confirmatory, and then only under careful observation.

Higgins[10] in the same year reports twenty-five cases of incipient hypothyroidism presenting an indefinite clinical picture—moderate dryness of hair and skin, neuroses of various types, vague unclassified pains. The author expresses the view that this type of incipient hypothyroidism occurs most frequently near the menopause, and bears some relation to ovarian activity.

I mentioned above that a possible third type of hypofunction of the thyroid, recently described in the literature, is the chronic nephrosis of Epstein. Epstein[11, 12, 13] in 1917 called attention to cases presenting certain clinical features in common with chronic parenchymatous nephritis, but showing a great hypercholesteremia, a low metabolic rate, a reduction in blood proteins with an increase of the serum globulin as compared with the serum albumin. In the normal serum the ratio of the albumin to the globulin is 2:1, while in nephrosis the ratio is so changed that there may be more gloubulin than albumin. The blood cholesterol, normally 175 mmg. to 100 mmg. per 100 c.c., may be as high as 1,300 mmg., the lipemia causing the blood to look quite milky. These cases, rare and usually in young people, complain of headache, dyspnea, vomiting. They show marked pallor, marked edema, urine diminished in amount, of high specific gravity and with large amount of albumin. But the blood pressure is low, and the chief changes in the blood chemistry are a very high cholesterol content, a low protein content, with inversion of the albumin globulin ratio. The blood urea nitrogen, creatinine, uric acid and chlorides are usually practically normal. The marked edema of these cases, Epstein explains on a basis of changed osmotic conditions, the reduction in the serum protein reducing the osmotic pressure of the blood below that of the tissues. He thus treats his cases with a very high protein, low carbohydrate, low fat diet, with excellent results in some cases. In 1920 the same author reports cases of nephrosis having myxedematous characteristics. The edema in such cases disappeared on high protein diet, and the myxedema characteristics cleared up on thyroid therapy. In 1922 Epstein presents

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his final conception of nephrosis, not as an essentially renal disease, but rather as a systemic disorder of metabolism associated with a relative insufficiency of the thyroid. The thyroid functions in these cases, but there seems to be an unusual demand made upon it due to the high blood cholesterol, so that there is a relative insufficiency of its hormone. In nephrosis cases with myxedema features Epstein uses high protein diet with thyroid extract and likewise in the simple nephrosis cases, when good results are not obtained with high protein therapy alone he resorts to thyroid therapy with good results. The amount of thyroid used in his cases is often far greater than in the simple myxedema cases. Thus he starts out with one-half to one grain three times a day, increasing the dose in many instances rapidly to 15 grains a day—or even 30 grains a day for six or seven days. For nephrosis Epstein would substitute the name "diabetes albuminuricus", implying a perversion of the protein metabolism related to thyroid insufficiency, somewhat after the manner that diabetes mellitus is a perversion of carbohydrate metabolism related to pancreatic insufficiency.

Thus has much evidence been adduced that the Epstein nephrosis is a form of thyroid insufficiency, and that nephrosis and myxedema are closely allied, the latter being frequently superimposed upon the former. Two cases of adolescent myxedema accompanied by nephrosis were recently reported by Davidson[14]; and Marsh[15] in the current year reports ascites in a myxedema patient clearing up with thyroid therapy.

A fourth group of hypothyroid cases recently reported might well be added for the sake of completeness, though most assuredly they are far removed from actual myxedema. These are the simple adolescent goiters. Plummer[16] in 1925 reported that the basal metabolic rate of patients having diffuse colloid goiters of adolescence is, in the majority of cases, below normal. In many such cases, instead of using iodine, he prefers to give small doses of thyroid extract, carefully controlled by metabolism tests. Iodine helps these cases by enabling the gland to produce more thyroidin, while thyroid extract offers replacement therapy, allowing the gland to rest.

The treatment of myxedema dates back thirty-five years, when Dr. George Murray[17] gave to the world a specific remedy, the administration of thyroid extract of sheep. In recent years, much has been done to standardize the method of treatment—to point out the difficulties and complications. In 1925 Sturgis and Whiting[18] of the Medical Clinic of the Peter Bent Brigham Hospital of Boston reported twenty-six cases, with special reference to the treatment and prognosis. Treatment in this series was controlled by 1st, the clinical response of the patient; 2nd, the basal metabolism; 3rd, the early morning resting pulse rate; 4th, the temperature; 5th, the body weight. In home treatment, in the absence of basal metabolism estimations, a careful determination of the resting pulse was considered as giving an accurate idea of the basal metabolism in most cases. Palpitation, dyspnea, excessive warmth, dizziness, nausea, undue acceleration of the pulse or elevation of the temperature were taken as indicative of over-dosage. The therapy was divided into two stages:

1. The initial dosage, calculated to restore the patient to a normal level of metabolism.

2. The maintenance dosage, or smallest amount necessary to keep the metabolism within normal limits.

The average initial dose was grs. 2, t.i.d. for five to ten days; the average maintenance was grs. 2 q.d., though this varied from grs. 1 q.d. to grs. 3. These authors point out how extremely hazardous the administration of thyroid extract can be in certain cases. The chief complications center around the heart, the kidneys and the blood. The heart is frequently dilated, but it has been shown by Fahr[19] that a failing heart in myxedema may respond to thyroid therapy plus digitalis, where digitalis alone is ineffectual. Bowen and Boothby[20] have shown that the administration of thyroid in chronic nephritis increases the retention of urea nitrogen. As the majority of myxedematous patients show albumin and casts in the urine, and some show a definite renal insufficiency as shown by functional tests, a rare danger of uremia becomes apparent. The severe anemia present in many cases throws added strain on the heart.

Sturgis and Whiting well point out that before beginning thyroid therapy in a myxedema patient the condition of the heart, kidneys and blood should be carefully ascertained. If the heart is markedly involved the patient should be digitalized first and the thyroid therapy started slowly; if the patient is anemic, one or more transfusions are advisable before beginning specific treatment; if there

is definite renal insufficiency, the thyroid dosage should be small, the diet reduced in protein and the blood urea nitrogen carefully watched.

While most cases suffering from myxedema can be restored to normal health, cardiac failure or uremia may cause a fatal termination. Serious mental changes may persist after the myxedematous condition is relieved. Only rarely has a case remained spontaneously cured after withdrawal of the thyroid therapy altogether, and such cases are to be accepted with skepticism.

Case Report

M. R., female, aged 56, twice married, was first seen July 31, 1926, recovering from what was described as a fainting attack while she was attempting to go from her bed to the bathroom.

Past History.—In childhood the patient had measles, whooping cough, chicken-pox and malaria. At the age of twenty-three she had a dilatation of the cervix for dysmenorrhea. Her general health was good until twenty-six years ago, when, at thirty years of age, an attack of influenza kept her in bed several weeks. From this time on she was always sickly—catching colds frequently, tiring easily, suffering from gastric upsets, menstruating sparsely and very irregularly. Twenty years ago, at the age of thirty-six, she had "peritonitis" following a miscarriage, but got well without an operation. Menstruation ceased about eighteen years ago, when the patient was thirty-eight years of age. She has two children, one aged twenty-seven and the other thirty-two, both by her first husband.

Family History.—The patient's father died of "anemia", though just what type I do not know. The mother died with "stomach trouble."

Present Illness.—This seems to date back to nine years ago, when, at the age of forty-seven, after a second mild attack of influenza, the patient's digestive disturbances became worse, and a gradual change in her voice and general appearance was noticed, first by her friends, and later by the patient herself. Always quite a talker, and possessed of a clear, somewhat high pitched voice, the patient found herself talking deliberately, slowly, and with considerable effort, and even to herself her voice sounded quite changed. Her relatives said she "dragged her speech", and friends noted a marked change in her facial expression, and to herself her face looked and felt puffy and swollen. About the same time the hair of the scalp, formerly very thick and fluffy, turned rapidly gray, and gradually became much thinner and coarser. The digestive symptoms, however, still constituted the patient's chief complaint. There was vomiting of everything eaten, soreness in right upper quadrant, sour eructations, constipation complicated by bleeding hemorrhoids. The patient had become very pale and there was a slight yellow tinge to the skin. A diagnosis of cholecystitis was made, the gall-bladder drained and hemorrhoidectomy performed eight years ago at St. Vincent's Hospital. I have been unable to locate her record at this time, it being during the war period, when some of the charts were lost. No stones were found, according to the patient, and the gall-bladder was drained without removal. Convalescence was uneventful and for a while the patient was improved. The yellow pallor persisted, the skin was noted to get progressively more dry and coarse. The patient continued to be weak, the change in the facial expression more marked, the voice still slower. The feet and hands were always cold, and the patient noticed that she no longer perspired, even on the hottest days of the summer months. However, fulness after eating, gaseous distention, sour eructations, continued to be the chief cause of the patient's distress, and were the symptoms for which she continued to consult various physicians for relief. In 1920 a gastro-intestinal X-ray was taken at the Protestant Hospital. A diagnosis of carcinoma of the stomach was made, the plates showing a filling defect near the pylorus, and evidence of obstruction. An exploratory operation was urged, but refused by the patient. During the succeeding two years the stomach symptoms abated slightly under medication and dietary care. On one occasion during this period the patient had quite a hemorrhage from her gums about a decayed tooth. Constipation was becoming more and more marked, and bleeding from hemorrhoids was again noticed.

Four years ago the patient began to suffer intense headaches, blurring of vision, burning and frequency of urination. A diagnosis of cystitis and pyelitis was made and successfully treated, these symptoms disappearing in a few

XUM

weeks. For a while the patient again felt much improved.

The last year of this long series of illnesses was marked by a progressively down-hill course. The weight remained about the same, 135 pounds, but the patient grew weaker and weaker. Shortness of breath, palpitation and giddiness were experienced on the slightest exertion. Vision often became blurred and at times there would be actual periods of blindness. The stomach symptoms again became accentuated, the slightest indiscretion in diet causing vomiting. The patient began to faint, at first only once every month or so; later two or three times a month. For two weeks prior to the first time I saw her she had been bedridden because of extreme weakness.

I first saw the patient through the courtesy of Dr. C. J. Andrews, who recalled having seen her about six years ago, and who was unable to make the emergency call he received from the patient's husband. The patient had fallen unconscious while trying to walk to the bathroom. I found an elderly woman, almost ghastly in color, reviving from a fainting spell. The pulse was good, and in a few minutes the patient was over her immediate condition. My subsequent investigations were at the incidence of Dr. Andrews, who was kind enough to turn the case over to me. Six days after my first visit, in answer to an urgent call, I found the patient again unconscious on the floor. Again she revived rapidly, but this time a severe diarrhea of two days' duration had still further weakened her, so that she was really in a serious condition. A dose of castor oil followed by tr. opii deod. controlled the diarrhea. Dilute hydrochloric acid was given empirically to control the vomiting, with no success, so an alkaline powder of oil of peppermint, soda bicarbonate, magnesia usta, bismuth subnitrate and extract of belladonna was prescribed with considerable relief. In about a week the patient was somewhat stronger again, and a complete physical examination was done.

Physical Examination.—A fairly well-developed, somewhat undernourished, elderly female, very weak, but comfortably lying in bed. Temperature 96.6; pulse 76, regular and of fair quality; blood pressure 114/70. The scalp hair was gray, thin and coarse. The face seemed unusually large, broad and coarse. There was marked puffy swelling under the eyes and along the temporal region and the rami of the jaw. The skin was rough and dry, and of a pale yellow tinge. The hands and feet were cold—the tips of the fingers being almost bloodless, pale and pinched. The skin of the wrist and lower arm was definitely scaly. The pubic hair was thin and brownish, while in the arm pits there was no hair at all. Though a hot day in August, there was no perspiration. The patient spoke deliberately, slowly, in a low monotonous drawl, and experienced difficulty in recalling events she was questioned about. The mucous membrane of the lips, gums and pharynx was pale; the tongue was thinly coated, but neither sore nor reddened. The teeth were in good condition, the conjunctivae were not icteric. No thyroid gland could be definitely palpated. The lungs were clear other than a few marginal rales at the bases; the heart was enlarged to the left, the sounds weak, with a blowing non-transmitted murmur over the base and at the apex. The musculature of the abdomen was poor, rendering deep palpation very satisfactory, but no evidence of pathology was noted. There was no tenderness or mass in the epigastrium; the liver and spleen were not detectably enlarged; the kidneys were just palpable. On vaginal examination, the cervix was small, smooth on surface; the uterus normal in size and shape. The knee-jerks were absent. Rectally, extremely large internal and external hemorrhoids were noted. A non-catheterized specimen of urine showed albumen three plus with many pus cells per high-power field. The blood Wassermann was negative.

Diagnosis.—I must confess that the diagnosis was actually "jumped at" in this case, for while taking the history my first impression suddenly clarified itself and the case seemed undoubtedly one of myxedema. The differential diagnosis included chiefly: 1. pernicious anemia; 2. severe chronic nephritis with secondary anemia; 3. malignancy. Abdominal palpation was so unusually satisfactory that it was hard to believe there was a carcinoma of the stomach, in spite of the X-ray findings. Though the patient had gone progressively down hill, weight loss had not been marked, and six years had elapsed. There was much to suggest pernicious anemia, but the tongue was atypical and the blood picture, though suggestive, was not entirely characteristic. The color index was one, the hemoglobin being 60 per cent, the red blood corpuscles 3,000,000. The white blood cells were 8,000, with 64 per cent polys, 36 per cent lymphs.

There was considerable anisocytosis and poikilocytosis, but no blasts, nor even megalocytes were seen. The patient appeared much more anemic than the blood picture indicated. The terminal stage of a chronic nephritis still seemed a likely possibility, especially as a catheterized specimen of urine showed albumen two plus, and 10 to 15 pus cells per high-power field. But the phenolsulphonephthalein test showed an accretion of 50 per cent, so that, as myxedema itself is often accompanied by an albuminuria, the urinary findings still could not be said to disprove the diagnosis. On August 4th, a basal metabolism test, done with the Protestant Hospital machine, recorded a basal metabolic rate of minus 46, and the diagnosis seemed indisputably established.

Treatment and Course.—Four days were spent in digitalizing the patient before any thyroid extract was given. During these four days the basal pulse, taken at 8 A. M., was almost constantly 68, and the temperature 96.6. On August 4th, thyroid extract, grains two, Mulford, was begun and increased two grains each of the next two succeeding days. The first evening of thyroid therapy the patient vomited several times, and during the next two days had random pains in various parts of the body. On the third day she received six grains of thyroid, and that evening, after a brief sensation of fainting, blurring of vision, jumping of heart, she began to feel warm all over—the first time she had felt warm in years. The temperature was 100, pulse rate 95. The pulse was irregular due to occasional extrasystoles. Thyroid was discontinued for twenty-four hours and then started up gradually; gr. 1 the first day, grs. 2 the second and then grs. 2 for one week, during which time the basal pulse did not rise over 78, and the temperature over 91.7. In the next seven days the dosage was gradually increased to grs. 5, when the basal pulse reached 80 and the temperature 97.4. However, on this dosage the pulse would at times during the day get much faster and the patient suffered precordial pains and palpitation. On dropping back to gr. 3 q.d., the temperature fell to 96.6 again, and after several more days of juggling, increasing by a ¼ gr. daily, 4¼ gr. q.d. was adopted as the proper dosage. This dosage was given daily for twenty days, maintaining an average basal pulse of 78 to 84, and temperature 97.5 to 99.2. The alkaline powder seemed to help the patient's gastric symptoms, and was continued three times a day after meals. The bleeding from the hemorrhoids was controlled by oxgall suppositories, and retention enemas of olive oil.

The first encouraging sign other than the return to normal of the temperature and pulse, was acceleration of the voice, noticeably at the end of the first week, and right remarkable to behold. About a week later the face began to smooth out, and by three weeks the myxedematous appearance was entirely gone. A complication hard to alleviate was an almost intolerable itching over all parts of the body. This seemed to be part and parcel of the cutaneous changes; the skin formerly dry,

rough, coarse, becoming moist, soft, and on the fingers even delicate. About the wrist and lower arm the skin peeled off entirely.

On September 19th, after forty days of thyroid therapy, with 4½ grs. a day for the last twenty days, the dosage was increased to grs. 2 q.d. In spite of these clinical signs of improvement, the patient had grown weaker and weaker. The thyroid therapy had caused considerable loss of weight, and an appreciable amount of blood had been lost per rectum. Generally, feeling greatly improved, no longer vomiting, and with voracious appetite, the weakness had progressed to a point where she could not even raise her head to take food without feeling faint. Discouraged, the patient refused thyroid for two days, and the temperature fell to 96.6, pulse 76. After considerable argument, she was prevailed upon to continue to take thyroid, grs. 2 q.d., and to go to the hospital for transfusion.

The patient entered the Protestant Hospital September 22nd. The next day the blood count was, red blood corpuscles 1,800,000; white blood corpuscles, 8,000; hemoglobin 29

per cent; polys 59 per cent; lymphs 39 per cent; transitional 2 per cent; catheterized urine, albumen faint trace—otherwise negative; blood N. P. H. 40.8 mg.; urea N. 20 mg.; sugar 97 mg.; chlorides 39.6 mg.; creatinine 1.23 mg. The blood cholesterol was 168 mg.; stool positive occult blood, negative for parasites.

The patient was given 500 c.c. of blood by direct transfusion. A moderate chill, with temperature of 101, was stood well. The basal metabolism six days later, taken with the same machine as the first time, was minus 19; the gastric analysis showed: total acidity 30, free HCl 17, no blood; and the blood picture showed marked improvement; R. B. C. 3,730,000; Hgb. 53 per cent. The patient left the hospital on the seventh day, still taking tr. digitalis m. 10 q.d., thyroid extract gr. 2 q.d., and an alkaline powder t.i.d. She was much stronger and able to walk a few steps. At home the improvement has continued at a rapid rate. Following the principles laid down by Epstein in his nephrosis cases, and Minot and Murphy in their pernicous anemia cases, a high protein diet of liver, kidney, sweet-breads and steak has been prescribed. This, along with an enormous appetite and an iron tonic, has brought about a steady increase in weight and strength. On September 22nd, when she left the hospital, the patient weighed 118 pounds. On November 11th her weight was 130 pounds, and the blood count showed R. B. C. 4,000,000, with 65 per cent hemoglobin. Though still slightly pale, the patient now looks like a normal individual, walks and talks with alacrity, and does her own house work. After having been bed-ridden so long, it is hard now to make her rest at all; and, peculiarly enough, new, dark hair is appearing which contrasts sharply with the gray. The patient has been told that she must continue to take thyroid the rest of her life. Three and a half months have elapsed since the patient was first seen. She has been in comparative good health for one month.

Comment. — In Sturgis and Whiting's twenty-six cases, there were only three with symptoms dating over nine years. In one case only was the basal metabolism lower than in the case above reported. An attack of influenza seems to have definitely been etiologically related to our case. I have been unable to find any data on pronounced gastric symptoms in myxedema. There was only a slight reduction in the total and free acid in our case, but the patient did much better on an alkaline powder than on dilute HCl. One of Mackenzie's cases showed an absence of free HCl. As in hyperthyroidism we usually have an achlorhydria, we might reasonably expect a hyperchlorhydria in myxedema. In this case the early morning temperature has seemed to be an excellent index of the basal metabolic rate. Looking back on the case I feel sure that it would have been better to have withheld thyroid therapy until one or more transfusions had been given. I wish to express my thanks to Dr. C. J. Andrews for his kind assistance and advice in the management of this case.

BIBLIOGRAPHY.

1. Gull, William: Sur le Myxoedema, Arch. gen de med., 143:677-685, 1879.
2. Osler & McCrae: Practice of Medicine, p. 865.
3. Chaney, William: Tendon Reflexes in Myxedema; a Valuable Aid in Diagnosis. *Jour. A. M. A.*, Vol. 82:2013.
4. Thacker & White: *Amer. Jour. Med. Sc.* Vol. 171:61. The Electrocardiogram in Myxedema.
5. Unverricht: Thyroidea und Erythropoese. *Klin Wehrrsher*, 2:166, Jan. 22, 1923.
6. Baker, W. A.: Dysthyroidism, a Factor in Secondary Anemia. *Jour. Kansas State Med. Society.* 24:321, Nov., 1924.
7. Warfield, L. M., and Green, I. W.: Hypothyroidism and its Relation to Chlorotic Anemia. *Jour. Mich. State. Med. Society*, 24:79, Feb., 1925.
8. Mackenzie, George M., Anemia in Hypothyroidism. *Jour. A. M. A.*, Vol. 80, 1926, p. 462.
9. Lawrence, Chas. H., Thyroid Failure, without Myxedema. Med. Cl. N. A., May, 1925, p. 1779.
10. Higgins, W. H.: Incipient Hypothyroidism; a Clinical Study. *Jour. A. M. A.*, Vol. 85:1015, Oct. 1, 1925.
11. Epstein, Albert A.: Clinical Types of Chronic Parenchymatous Nephritis: Their Treatment and Results. Med. Cl. N. A., July, 1920, p. 145.
12. Epstein, Albert A.: Clinical Course and Therapeutic Management of Chronic Nephrosis. Med. Cl. N. A., Jan., 1922, p. 1067.
13. Epstein, Albert A.: Concerning the Causation of Edema in Chronic Parenchymatous Nephritis: Method for its Alleviation. *Amer. Jour. Med. Sc.* 154:638.
14. Davidson, J. R.: *Jour. Canad. Med. Assn.*, 15: 598, June, 1926.
15. Marsh, H. E.: Myxedematous Ascites Removed by Thyroid Extract. *Jour. A. M. A.*, Oct., 1926.
16. Plummer, Wm. A.: Iodin in the Treatment of Goiter, Med. Cl. N. A., Jan., 1925, p. 1145.
17. Murray, George: On the Treatment of Myxedema by the Hypodermic Injection of an Extract of the Thyroid Gland of the Sheep. *Jour. A. M. A.*, Oct. 10, 1891, p. 796.
18. Sturgis, Cyrus C., and Whiting, Walter B.: The Treatment and Prognosis in Myxedema. *Jour. A. M. A.*, Vol. 85:2013.
19. Fahr, George: Myxedema Heart. *Jour. A. M. A.*, Vol. 84:345, Jan. 21, 1925.

20. Bowen, B. D., and Boothby, W. M.: A study of the Effect of Thyroid Medication on the Basal Metabolism. Renal Function and Nitrogen Balance in Chronic Nephritis and Hyperthyroidism. Urol. Oct., 1917.

303 *Medical Arts Building.*

OBSERVATIONS ON FIFTY SKIN CANCERS AND OTHER CHRONIC SKIN LESIONS SUCCESSFULLY TREATED WITH X-RAY.

By GEO. H. CARR, M. D., Portsmouth, Va.

The etiology of malignant neoplasms has not been solved. Any sore or swelling occurring on the lips or tongue or inside the mouth or any part of the face or body in a man after forty-five years of age should be treated as cancer. A very large proportion of such sores or swellings occurring at this time of life are cancer and, if neglected, are frequently fatal. When moles, warts or other growths on the skin are exposed to constant irritation, they should be immediately rayed, for a large number of them otherwise terminate in cancer. Growths, histologically not cancer but precancerous, are easily cured by proper radiation. A large percentage of the epthelioma lesions treated by me were on the face. These occurred as irregular shaped ulcers, the surfaces of which were also irregular and more or less verrucose in appearance, resembling friable granulation tissue which bled easily. The edges were thick and of a stony hardness, while the secretion was scanty and bloody. There was no pain. A number of them were of the basal cell type of cancer and were located around the eye-lid, in the naso-facial grooves, and other parts of the face. The margins were indurated and of irregular outline. The base was glazed and uneven, exuding a sangineous viscid secretion. The condition gave a history of having begun as a papule, which became scaly, and later developed into an excoriation covered by a crust.

Where the diagnosis can be made without operation or removal of a section, it is better, even if there is no danger of spreading the disease, for an operation interferes with the treatment by increasing the tenderness and swelling in the neighborhood of the operation.

The method of choice in the treatment of growths of the nose, ears, eyes, lips or any part of the face, is the X-ray. The cosmetic results following successful cure of various lesions of the face are very gratifying, since there is no pain and the resultant scar is hardly noticeable. It is my custom to use the following technique: I bring the radiation in the diseased area within fourteen days to 100 per cent of an erythema dose by treatment every third day; then I keep it at this saturation point by subsequent fractional dosage for a period of at least three weeks. No positive rules can be laid down that are applicable in all cases of skin cancer.

Some very large cornua of the nose, pigmented moles, several cases of keratosis sennsilis, psoriasis and other skin diseases, were cured by giving mild dosage of X-ray at frequent, regular intervals. All radiation must be carefully measured and cumulative effects calculated; otherwise, there may be insufficient radiation, and treatment fail, or there may be an excessive effect and considerable damage follow.

For lesions on the canthus of the eye, I use the cautery wire and X-ray with excellent results.

Case Reports

Mrs. J. H. D., age sixty-five years. Cornu of nose, conical in shape, 2.5 cm. long. Duration 10 years. The whole growth was crusty, but had a very firm base.

The healthy tissue was protected by lead, leaving an exposed area .5 cm. from base of growth; a marked erythema was produced by giving two milliamperes ten minutes each treatment for three weeks. Cornu dropped off four weeks after treatment was discontinued.

Mrs. B., age seventy. Prickle cell epithelioma on left side of nose, extending halfway over upper eye-lid. Duration ten years. Three milliamperes, five minutes each treatment for two months affected a cure.

Mr. G. L. A., age seventy. Basal cell epithelioma on auricle of ear, duration two years, required large dosages of X-ray to produce erythema, which was maintained by fractional doses for six weeks. Healthy tissue was protected by sheet lead. A large wart on outer edge of ear came off.

Mrs. B., age forty-five. Precancerous sore on lower lip, three years' duration, would suppurate every two weeks and discharge pus, but would not heal. A large deep scab was formed by giving four milliamperes ten minutes, twice a week for four weeks. Scab came off two weeks after treatment was stopped, and the lip was entirely well.

Mrs. M. A. T., age fifty-five. Basal cell epithelioma. One year duration, involving two-thirds of entire nose. No biopsy. Treated, in 1923, by five 100 per cent erythema doses; cured; no return.

Mr. L. H. G., age twenty-five years. Lupus vulgaris; patch two by two and a half inches on side of face. Duration 10 years. Treated 1918; no return.

Mrs. V. A. H., age fifty. Angioma of inner canthus, protruding .5 cm. from eye-lids when closed; attached by a broad base; would bleed easily. Duration two years. Treated with cautery wire and X-ray combined. Cured.

301 *Court Street.*

Analyses, Selections, Etc.

Malaria Treatment of General Paralysis.

Dr. L. L. Williams, Surgeon of the U. S. Public Health Service, located in Virginia as Medical Officer in Charge of Field Investigations of Malaria, made the following abstract from "A Compilation of Abstracts on File in the Division of Venereal Diseases, U. S. Public Health Service, Washington, D. C.," for use in a conference of Virginia health workers. (*Compilation No.* 5, January 1, 1927). We are publishing it as we feel it will be of interest to our readers.

General Paralysis of the Insane was first recognized in 1851 by Willis. In 1798, Haslam described the first undoubted case. As early as 1816 it was noted that apparent cures often followed acute febrile illness. Also, in the Middle Ages, quartan ague (malaria) was supposed to cure epilepsy. Deljado says that in Ancient Peru those with Leishmaniasis went to malarious places for cure.

This most modern of treatment (malarial therapy) seems also to be another recrudescence of ancient lore, for as Gerstman points out, Hippocrates and Galen knew that fevers had a curative effect on psychoses.

General Paralysis was first thought to be mental disturbance, then a psychosis, until it was found that 100 per cent of all patients gave a syphilitic history. Every infectious disease is theoretically curable after discovery of the infecting organism. This is not so in General Paralysis. Specific treatment has proven a failure.

Wagner-Jauergg in 1909 reported success with tuberculin and mercury. Tuberculin every second day to produce recurring fever. He later used typhoid vaccine. These are but imperfect substitutes for infectious diseases by which nature sometimes effects the cure of paresis.

In 1917, he first used tertian malaria as a febrifacient. Of nine cases treated in 1917, three were still doing their normal work in 1921.

It is of interest to note that Rosenblaum, in Russia, inoculated a small number of paretics with malaria, and possibly with some other infectious diseases, and reported his good results in 1876. But he feared to admit intentional inoculation and at that time claimed that natural infection had occurred.

Malarial treatment of general paralysis is in general favor in Austria, Germany, England, and America. The French have not taken readily to this measure.

Theory

The mechanism is unknown. There may be an antagonism between the plasmodium and the spirochete; maybe malarial antibodies are antagonistic to the spirochete of syphilis; maybe fever increases the speed of syphilitic antibody production? The plasmodium of malaria has a predilection for the brain capillaries, perhaps it increases the vessel's permeability to syphilitic antibodies. Another theory is indicated by the fact that the spirochete is paralyzed by slight elevation of temperature whereas leucocytes are stimulated. The more bacteria leucocytes ingest, the greater the production of alexins inimical to the bacterium.

Animal experimentation by Schamberg and Rule has shown that spirocheta pallida is very susceptible to moderate elevations of temperature. The organism's thermal death point is 41° C for six hours. If rabbits are given hot baths (4° F. rise in body temp.) for short periods each day for a few days after inoculation, syphilis will not appear.

Very malarious countries conspicuously lack General Paralysis and tabes. Will malaria reduction increase these diseases?

Even if malaria cures the paresis the spinal fluid retains its pleocytosis and the spinal fluid Wassermann is not changed. To clear this up one must give Salvarsan and spinal canal injections of salvarsanized serum.

Technique

The greatest difficulty is encountered in transporting viable malaria for inoculation. Malarious blood may be defibrinated, cooled, and packed in sawdust or shipped in a thermos bottle. It may be kept for twenty-four hours at 30° C; has been kept for seventy-five hours.

The usual method of inoculation is to inject 2 or 3 c.c. of blood from a malarious patient, subcutaneously or intramuscularly, into the paretic. Tertian malaria is used (P. vivax). Malaria develops in three to ten days. Permit ten to tewelve attacks, then give quinine (30 gr. daily for three days) followed by 15 gr. daily for two weeks.

Statistics seem to show of all cases treated with malaria, that about 30 per cent are cured and return to their former usual occupations. Good results are to be expected in early cases, maniacal cases, in cases of simple dementia, in seizure cases and in tabetic cases. Poor results are seen in advanced, senile, and juvenile cases.

Quinine easily controls the induced malaria. We must use only pure strains of benign tertian.

The common experience of a number of workers shows:

Thirty per cent complete remission.
Twenty per cent incomplete remission.
Twenty per cent slight improvement.
Twenty per cent unchanged.
Ten per cent dead.

In untreated cases about 10 per cent show remission; the rest die rather soon.

The parasite has been carried through eighty hosts without resort to the *Anopheles*. James says if inoculation is by infected mosquito that results are better than by injection of malarious blood.

Many authors herein report on their cases of General Paralysis treated with malaria. In all well over 1,500 cases have been carefully studied and reported. Nearly all agree that malaria therapy is the only hopeful treatment and that generally good and lasting results may be expected in favorable cases, that is, early cases and in persons not otherwise debilitated. Many combine arsenic treatment with the malarial, usually following it. Some authorities point out various contradictions, usually advanced heart disease, jaundice, great weakness, and advanced renal involvement.

All state that the course of malaria must be followed by daily blood examination and the course of the attack terminated if the parasites increase suddenly in numbers. Intensification of paretic symptoms or even coma are not necessarily contraindications.

All seem to find induced malaria very easy to treat, responding promptly to very small doses of quinine continued sometimes for as short as two days and apparently never over two weeks. Relapses seem to be very few.

Other experiments have been tried. Ahlswede injects an albumin compound which has been split into polypeptids and Amino acids. Fischer uses sodium nucleinate—he reports extremely good results.

Others have variously used vaccines, toxins, and proteins, but without results as good as with malarial therapy. The nearest contender seems to be with another infection, recurrens, which is caused by spirochaete duttoni. Recurrent fever needs no treatment being self limited, is not as severe as malaria, *but* does not seem to produce lasting results. Typhus, however, is reported to have cured completely one case of syphilis.

Anyone contemplating the treatment of General Paralysis of the Insane with malarial attacks would do well to read this compilation of articles by 136 authors.

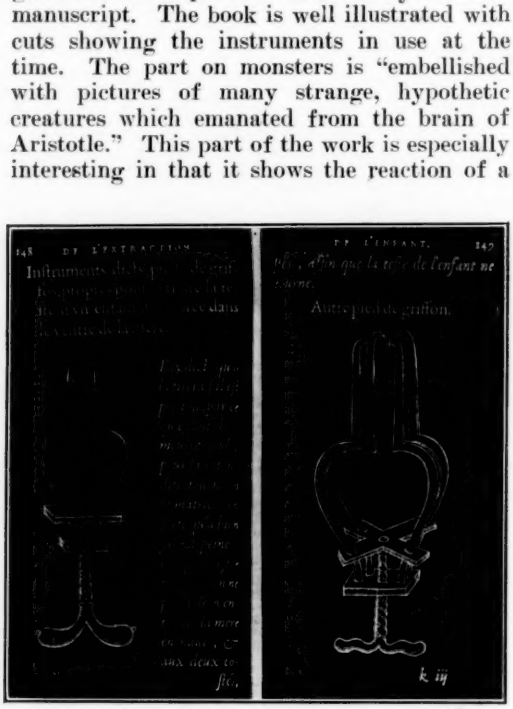
Bibliotheca Obstetrica

Pare.

Paré (Ambroise) [1510-90] Deux livres de chirurgie. I. De la génération de l'homme, et manière d'extraire les enfans hors du ventre de la mère, ensemble ce qu'il faut faire pour la faire mieux, et plus tost accoucher, avec la cure de plusieurs maladies qui luy peuvent survenir. II. Des monstres tant terrestres que marins, avec leurs portraits. Plus un petit traité des plaies faites aux parties nerveuses. 11 p. l., 619 pp. port. 8° *Paris, A. Wechel*, 1573.

This is a much more elaborate treatise on obstetrics than the little book that he published in 1550, as is shown not only in the more thorough treatment of the subject matter, but also in the appearance of the book. The 96 double pages (only the right hand pages were numbered) of the "Briefve Collection" included some entirely blank pages, and the text reflected inexperience or careless proof reading. For instance, he spells his fellow barber surgeon's name, Thierry de Héry, with small let-

ters. The "Deux Livres" on the other hand shows evident regard for appearances. Each page is boxed in with a double line above and a single line below and to either side, as was quite common in gift-books of poems a generation ago. The type is very pretty *Italic*, and gives one the impression of carefully executed manuscript. The book is well illustrated with cuts showing the instruments in use at the time. The part on monsters is "embellished with pictures of many strange, hypothetic creatures which emanated from the brain of Aristotle." This part of the work is especially interesting in that it shows the reaction of a practical and scientific mind that is just emerging from the mediaeval sea of ignorance and superstition. Thus, among the causes of monsters, he enumerates the glory of God, His ire, and the activities of demons and devils. He had no doubt but that there were demons in the air, on earth and in man himself. He himself saw a sorcerer, possessed of a devil, do marvelous things in the presence of Charles IX and his nobles. He writes with awe of succubi and incubi, although in the 1585 edition he adds a note that he believes "this cohabitation is imaginery, proceeding from an illusory impression of Satan." Yet he describes two specimens of monstrous births that came under his own observation in a very modern way without any reference to supernatural etiology.



The nearest approach to obstetrical forceps in Pare's time.

Paré was a very practical man, full of common sense, and was more impressed by results than he was by the opinions of authorities. In "The Apology and Treatise" in which he replies to Gourmelen's condemnation of his use of ligatures in amputations, while he cites authorities to show that bleeding vessels should be tied, he relies chiefly on re-citing successful cases to prove the correctness of his operation. His zeal in the quest for successful remedies is shown in the puppy fat episode. At Turin he met a surgeon who claimed to have an invaluable remedy for arquebus wounds, and it was two years before he could get from him the secret recipe, which consisted of newborn puppies boiled in oil of lilies, mixed with earthworms, prepared with oil of Venice. Arabian ideas in therapeutics were still dominant throughout Europe. Bezoar stones were thought to be universal antidotes. Charles IX had such a concretion of which he was very proud, and Paré persuaded the king to try it on a criminal who was condemned to death. Accordingly, the criminal was given a poison and immediately the bezoar stone, but died in seven hours. At the autopsy Paré showed that he died of corrosive sublimate poisoning. His opinion of mummy and unicorn's horn, two remedies held in the highest esteem, is interesting. Both were costly remedies, and as the result mummies were sometimes made in France. Paré says, "Nevertheless I believe that they are as good as those brought from Egypt; because they are none of them of any value. Thereupon we will send them back to Egypt, as we will the unicorn to inaccessible deserts."

Paré's practical nature is further shown by his clinical observations. He was the first to suggest that syphilis was the cause of aneurysm. When alopecia is due to this disease, the patient is to be rubbed with mercurial ointment "until he enters the kingdom of Bavaria" a pun on the French word *baver*, to salivate. Paré was the first to discover at autopsy metastatic abscesses of the internal organs following wounds. Finally, as an evidence of Paré's common sense is his experience during the massacre of St. Bartholomew. He pursued his calling with such singleness of purpose, and was withal so useful, that his religion was unnoticed. Charles IX is said to have commanded Paré to come to the king's chamber and not to budge from it, saying that, "it was not right that one who could save so many poor people should be thus massacred."

M. P. R.

Correspondence

A Warning.

April 11, 1927.

To THE EDITOR:

I wish to call the doctors' attention, through your Journal, to a matter which I believe interests them to quite a degree. It has been customary with me, and I am sure with a large number of the profession, to give subscriptions to popular magazines to solicitors, who come around periodically.

I have been victimized twice in this manner. Only recently I gave a check for $7.80 to a solicitor who had been coming around for quite a number of years, and I presumed was O. K.. but, after waiting two months for my magazines, I was notified by the publishers that the man had forged the name of the publishing house; cashed the check; and I am out the magazines and money.

The name of this solicitor is H. E. MacCartney, of Richmond, who has made a speciality of soliciting doctors for *Colliers*, *Judge*, *Scribner's*, etc.

I trust you will publish this letter so that the profesion will be warned.

G. C. W.

Proceedings of Societies

The Rockbridge County Medical Society

Held its regular bi-monthly meeting at Jackson Hospital, Lexington, Va., April the 1st. In spite of bad weather there was a good attendance and an unusually interesting program. Drs. A. F. Robertson and M. J. Payne, Staunton, attended as visitors in an effort to arouse interest in the Valley Medical Association. Papers were presented by Dr. H. F. Giesen, of Brownsburg, on "Acute Tetanus: Report of a Case with Recovery"; by Dr. M. T. Vaden, of Buena Vista, on "Management of the Third Stage of Labor", and by Drs. C. H. Davidson and Reid White, of Lexington, on "Tularemia: Symptoms, Diagnosis and Treatment."

Dr. E. P. Tompkins, Lexington, is president of this Society and Dr. Howard L. Mitchell, also of Lexington, secretary-treasurer.

The paper on Tularemia was of unusual interest, especially in view of the fact that Dr. Davidson's case antedated any case so far reported as occurring along the Atlantic Coast.

In connection with the paper by Drs. Davidson and White, it is interesting to publish the following letter to Dr. Davidson from the Office of the Director of the Hygienic Laboratory, Washington.

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE
OFFICE OF THE DIRECTOR
HYGIENIC LABORATORY

March 30, 1927.

Dr. C. H. Davidson,
Lexington, Va.

Dear Dr. Davidson:

Serum of Mrs. J. M. D., white, female, age 50, collected March 28, 1927, and forwarded with red slip, arrived March 29th, and was found to agglutinate Bacterium Tularense in dilutions of 1:10, 20 and 40, but not in higher dilutions, thus confirming your diagnosis of Tularaemia.

In your letter of March 26th, you inquire whether the two D— cases (Nov. 11, 1920, and Nov. 12, 1920), are among the earliest recorded cases in the East.

They are actually the earliest, by one year, of any in the East that have come to my notice. I have been carrying a case of Dr. J. Lawn Thompson, Washington, D. C., as the first to be recognized in the East. His case was a market man of this city who became ill while dressing rabbits in November-December, 1921, with enlarged axillary glands and fever. In June, 1922, his physician, looking back, called my attention to the case, which was then positive, 1:320.

The next earlier cases east of the Mississippi River are three patients of three ophthalmologists of Cincinnati, (Vail, 1914); (Sattler, 1915); (Lamb, 1917).

I will get your case into my articles in the future. I congratulate you on your observations.

Sincerely yours,

EDWARD FRANCIS, *Surgeon.*

Nottoway-Dinwiddie-Prince George County Medical Society.

Doctors from Dinwiddie, Prince George and Nottoway Counties met in Petersburg on the evening of April 28th and organized a society to be known as the Nottoway-Dinwiddie-Prince George County Medical Society. This organization plans to return their individual charters to the Medical Society of Virginia and request a new charter to include the three counties named. This seems an ideal plan as both Nottoway and Prince George Counties have been inactive for a long time. Dr. Wright Clarkson, Petersburg, was appointed a committee of one to draft suitable Constitution and By-Laws. These were presented and adopted as amended, at this meeting. The fiscal year is to coincide with the calendar year. Meetings will be held bi-monthly.

The following officers were elected to complete the current year: President, Dr. E. W. Young, Petersburg; vice-presidents, Dr. W. W. Bennett, Blackstone, and Dr. S. E. Gunn, Hopewell; and secretary-treasurer, Dr. W. C. Powell, Petersburg.

XUM

The Bedford County Medical Society,

At its regular meeting on April the 25th, elected the following officers for the ensuing year: President, Dr. Thomas P. West, Bedford; vice-president, Dr. M. W. Gibbs, Goodes; secretary-treasurer, Dr. R. A. Bennett, Bedford. At this meeting, the Society endorsed the resolutions adopted by the Medical Society of Virginia at its 1926 session with regard to "Public Information and Periodic Health Examinations" and appointed a committee to cooperate with Dr. R. K. Flannagan, chairman in charge of this work.

The Amelia County Medical Society

Held its regular meeting at Amelia, Va., on April 7, 1927. After dispensing with the usual business and discussing important medical matters, the following officers were elected for the ensuing year: President, Dr. George A. Arhart, Amelia; vice-president, Dr. H. Cowles Rucker, Mattoax; and secretary-treasurer, Dr. James L. Hamner, Mannboro.

The Warren-Rappahannock-Page Medical Society

Held its regular meeting in Front Royal, Va., April 19th. There was a large attendance of members and invited guests and this meeting was one of the most interesting in the history of the Society. A banquet was tendered the visitors at the Afton Inn. Dr. E. L. Grubbs, of Front Royal, is president, and Dr. D. M. Kipps, also of Front Royal, is secretary-treasurer.

Woman's Auxiliary, Medical Society of Virginia

At the request of the officers of the Auxiliary, this space has been set aside for communications from them regarding matters of interest, both to the profession and to the women members of their families.

All communications should be addressed to Mrs. E. F. Truitt, Secretary, Westover Avenue, Norfolk, Virginia.

Washington Program—Woman's Auxiliary to the American Medical Association.

Monday, May 16th will be the beginning of the activities.

MONDAY, MAY 16TH

Morning—

Will be devoted to visiting: Corcoran Art Gallery; Pan-American Building; The Memorial Continental Hall, N. S. D. A. R. and placing wreaths on the statues of noted physicians—Benjamin Rush, Samuel Gross, William Crawford Long, W. C. Gorgas and Walter Reed.

Afternoon—

Visit to Surgeon-General's Library and a visit to the Navy Yard and Gun Factory, concert by the U. S. Navy Yard Band. Inspection of President's yacht "Mayflower" and the hospital ship "Relief". Visit to Marine Barracks and a concert by U. S. Marine Band. Pilgrimage to Mount Vernon.

Evening—

Visit to Library of Congress where the ladies will especially want to see the shrine of the Declaration of Independence and the Constitution of the United States.

TUESDAY

Morning—

Visit to Washington Monument, Bureau of Printing and Engraving and the Capitol of the United States.

Afternoon—

Trip to Arlington National Cemetery and the old home of General Robert E. Lee. There will be exercises in memory of members of the American Medical Association who gave their lives in the World War.

Evening—

Opening session of the American Medical Association in Memorial Continental Hall, N. S. D. A. R.

WEDNESDAY

This is the most important day for the ladies and the Virginia women are especially urged to make every effort to attend. If they can only be in Washington one day do try to make it Wednesday, May 18th. All ladies are invited whether they are members of the Auxiliary or not.

Morning—

The annual meeting of Woman's Auxiliary to the American Medical Association will be held in the American Red Cross Building Wednesday morning from 9:30 to 12:00. Adjourn for

Afternoon—

lunch nearby, meeting again from 2:00 to 4:00 with a "Working Conference". Reports from the different states will be heard

and plans for advancement discussed. Georgetown College will be at home to the doctors and their wives from 4:30 to 6:00.

Evening—

A special program and Reception at Memorial Continental Hall honoring the wife of the President of the American Medical Association, the wife of the President-elect, the President of the Woman's Auxiliary and the incoming President, and all visiting ladies. This reception is given by the Woman's Auxiliary to the Medical Society of the District of Columbia and all ladies are invited.

THURSDAY

Morning—

Will be spent visiting—New National Museum; Freers Art Gallery; Smithsonian Institute; Old National Museum, and Phillips Art Gallery.

Afternoon—

Another visit to the Navy Yard and the President's yacht "Mayflower" and the hospital ship "Relief". The President and Faculty of George Washington University will be at home to the doctors and their wives at Corcoran Hall.

Evening—

General reception to the President and officers of the American Medical Association and to members of the American Medical Association and their wives at the Mayflower Hotel.

INFORMATION FOR LADIES

Ladies Registration Booth open continuously at Headquarters. Washington Auditorium, 19th and E Sts., N. W.

All guests of the Convention whether members or not, are requested to register at the Woman's Auxiliary Booth in the lobby of the Washington Auditorium. (Headquarters).

Committees on information will be provided and will welcome visitors. These committees will be stationed at all the public buildings at scheduled visiting times. They will also be at the Union Terminal Station, the Mayflower Hotel, the Willard Hotel, the Washington Hotel, the Raleigh Hotel, and at the Washington Auditorium.

Many places of interest to the visitors are not included in our program because of lack of time. Such places are as follows:

National Lincoln Memorial, in Potomac Park; Tomb of Woodrow Wilson, in the National Cathedral, at Mt. Saint Albans; United States Government Printing Office; United States Bureau of Standards; Great Falls of the Potomac River; Franciscan Monastery; Washington Zoo.

Those wishing to visit any of these places should register at any information booth and a trip may be arranged.

The Truth About Medicine

In addition to the articles enumerated in our letter of February 26th, the following have been accepted:

Abbott Laboratories
- Abbott's Mineral Oil Emulsion
- Ephedrine Hydrochloride—Abbott

Eli Lilly & Co.
- Ephedrine Sulphate—Lilly
  - Pulvules Ephedrine Sulphate—Lilly, 0.025 Gm.
  - Pulvules Ephedrine Sulphate—Lilly, 0.05 Gm.
  - Ampoules Ephedrine Sulphate—Lilly, 1 c.c., 0.05 Gm.
  - Solution Ephedrine Sulphate—Lilly, 3 per cent.

E. R. Squibb & Sons
- Scarlet Fever Streptococcus Toxin—Squibb, 1 c.c.

Towt-Nolan Laboratory
- Lactobacillus Acidophilus Milk (Towt)

Nonproprietary Articles
- Ephedrine

NEW AND NON-OFFICIAL REMEDIES

Concentrated Pollen Extracts—Swan-Myers.—In addition to the products listed in New and Non-official Remedies, 1926, p. 28, the following have been accepted: Cosmos Concentrated Pollen Extract—Swan-Myers; Dandelion Concentrated Pollen Extract—Swan-Myers; Palmer's Amaranth Concentrated Pollen Extract—Swan-Myers. Swan-Myers Co., Indianapolis. (Jour. A. M. A., March 5, 1927, p. 788.

Ephedrine.—Ephedrine is an alkaloid first obtained by Nagai in 1887 from ma huang (*Ephedra equisetina*). Chemically, ephedrine is a-hydroxy-b-methylamino-propylbenzene. Structurally, it is closely related to epinephrine. Its salts are, in general, soluble in water and in alcohol, and the solutions are stable. Ephedrine produces effects similar to those produced by epinephrine. It also has been found to exert a direct depressant action on smooth and cardiac muscle. It produces a rather lasting rise of blood pressure, on intravenous or intramuscular injection, due mainly to vasoconstriction. Thus far, the most definite indications for the usefulness of ephedrine are for its local use on the turbinates and for ophthalmic examinations. Ephedrine has proved effective in some cases of asthma.

Ephedrine Hydrochloride.—The hydrochloride of an alkaloid obtained from *Ephedra equisetina*. For a discussion of its actions and uses, see preceding abstract "Ephedrine."

Ephedrine Hydrochloride—Abbott.—A brand of ephedrine hydrochloride—N. N. R. Abbott Laboratories, North Chicago, Ill.

Ephedrine Sulphate.—The sulphate of an alkaloid obtained from *Ephedra equisetina*. For a discussion of its actions and uses, see preceding abstract "Ephedrine."

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Ephedrine Sulphate—Lilly—A brand of ephedrine sulphate—N. N. R. Ephedrine Sulphate—Lilly, is also marketed in the form of Pulvules Ephedrine Sulphate—Lilly, 0.025 Gm.; Pulvules Ephedrine Sulphate—Lilly, 0.05 Gm.; Ampoules Ephedrine Sulplate—Lilly, 1 cc., 0.05 Gm.; and Solution Ephedrine Sulphate—Lilly, 3 per cent. Eli Lilly & Co., Indianapolis. (Jour. A. M. A., March 19, 1927, p. 925).

Lactobacillus Acidophilus Milk (Towt).—A milk culture of *B. acidophilus* which contains not less than 250 millions of viable organisms (*B. acidophilus*) per c.c. at the time of sale. For a discussion of the actions and uses of bacillus acidophilus preparations, see New and Non-official Remedies, 1926, p. 211, "Lactic Acid-Producing Organisms and Preparations." Towt-Nolan Laboratory, Oakland, Calif.

Scarlet Fever Streptococcus Toxin—Squibb (New and Non-official Remedies, 1926, p. 368).—This product is also marketed in packages of three 1 c.c. vials, each containing 30,000 skin test doses. E. R. Squibb & Sons, New York.

Glaseptic Ampoules Sodium Cacodylate—P. D. & Co., 0.05 Gm., 1 cc.; Glaseptic Amopules Sodium Cacodylate—P. D. & Co., 0.1 Gm., 1 c.c.; Glaseptic Ampoules Sodium Cacodylate—P. D. & Co., 0.13 Gm., 1 c.c.; Glaseptic Ampoules Sodium Cacodylate—P. D. & Co., 0.2 Gm., 1 c.c.; Glaseptic Ampoules Sodium Cacodylate—P. D. & Co., 0.3 Gm., 1 c c.; Glaseptic Ampoules Sodium Cacodylate—P. D. & Co., 0.45 Gm., 1 cc.; Glaseptic Ampoules Sodium Cacodylate P. D. & Co., 1 Gm., 2 c.c.; Glaseptic Ampoules Sodium Cacodylate—P. D. & Co., (for Intravenous Use), 0.2 Gm., 5 c.c.; Glaseptic Ampoules Sodium Cacodylate—P. D. & Co., (for Intravenous Use), 0.45 Gm., 5 c.c.; Glaseptic Ampoules Sodium Cacodylate—P. D. & Co. (for Intravenous Use), 1 Gm., 10 c.c. For a discussion of the actions and uses of sodium cacodylate, see Useful Drugs, Seventh Edition, p. 113. Parke, Davis & Co., Detroit. (Jour. A. M. A., March 26, 1927, p. 1003).

PROPAGANDA FOR REFORM

Desitin Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Desitin is the nondescriptive name applied to an ointment manufactured by the Chemische Fabrik Desitim Aktiengesellschaft, Berlin-Tempelhof, Germany, and distributed in the United States by the Desitin Chemical Company, Providence, R. I. According to the distributor, there are in 100 parts of Destitin, 28 parts zinc oxide, 14 parts "Bolus alba" (kaolin), 16 parts "Adeps lanae treated with H_9 PO_4 and neutralized with KOH," 22 parts "Cod-liver oil extract, which is purified in a KM_nO_4 solution and then extracted. This extraction is subjected to a treatment with C1," and 20 parts "Natural Vaseline." No information was furnished the Council in regard to the actual composition of the cod-liver oil extract and an analysis by the "Rijks-Instituut" did not confirm the claimed composition. The ointment is recommended for all sorts of skin lesions and extravagant claims are made for its effects. The Council found Desitin unacceptable for New and Non-official Remedies because the claims made for it are unwarranted. (Jour. A. M. A., Feb. 26, 1927, p. 666).

Lukosine Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that "Lukosine" is an "antiseptic Vaginal Douche Powder" manufactured by The National Drug Co., Philadelphia. In the advertising the preparation is said to contain "the valuable antiseptic constituents of Thyne, Peppermint, Eucalyptus, Wintergreen with Boric Acid, Alum, Zinc Sulphate, Hydrastine Hydrochloride, Sodium Salicylate and Phenol." Extravagant claims for the efficiency of Lukosine in the treatment of Leucorrhea and other conditions are contained in the advertising. Preparations similar to Lukosine have been offered to the medical profession and to the public for many years. The Council found Lukosine unacceptable for New and Non-official Remedies because it is a semi-secret, needlessly complex, and therefore irrational mixture, marketed with a therapeutically suggestive name and with unwarranted claims, in such a way as to lead to its indiscriminate and ill-advised use by the public. (Jour. A. M. A., Feb. 26, 1927, p. 667).

Book Announcements

The Medical, Social, Economic, Moral and Religious Aspects of Birth Control. By S. ADOLPHUS KNOPF, M. D. (Univ. New York and Paris), New York. Third Edition. Revised and enlarged. Based upon an address delivered December 21, 1925, at the New York Academy of Medicine before the Medical Association of the Greater City of New York, and printed in the **Medical Journal and Record** of January 6, 1926. 66 pages. Price 25c paper bound; 50c cloth bound. For sale by American Birth Control League, Inc., 104 Fifth Av., New York, receipts to be used for propaganda work of the League and the maintenance of birth control clinics.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Various Subjects, by Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, M. D., Philadelphia, and others. VOLUME I. Thirty-Seventh Series, 1927. Philadelphia and London. J. B. Lippincott Company. 1927. Octavo of 304 pages. Illustrated.

Mineral Waters of the United States and American Spas. By WILLIAM EDWARD FITCH, M. D., Member of the International Society of Medical Hydrology, etc. Illustrated. Lea & Febiger. Philadelphia and New York. 1927. Octavo of 799 pages. Cloth. Price $8.50.

The Fifth Avenue Hospital Clinics. First Series Based on the Material from the Semi-Monthly Staff Meetings, MCMXXV. Editorial Board: JOSEPH H. FOBES, M. D., MILTON J. RAISBECK, M. D., D. S. D. JESSUP, M. D., Secretary, and CHARLES F. TENNEY, M. D., Chairman. Paul B. Hoeber, Inc., Publishers. New York, 1927. 336 pages, Illustrated. Cloth. Price, $5.00.

Should We Be Vaccinated. A Survey of the Controversy In Its Historical and Scientific Aspects. By BERNHARD J. STERN, Instructor of Sociology, Columbia University. Harper & Brothers, Publishers. New York and London. 1927. 146 pages. Cloth. Price $1.50.

Proceedings of the Nineteenth and Twentieth Conferences of the American Association of Medical Milk Commission, in Conjunction with The Certified Milk Producers' Association of America. Nineteenth Annual Conference held at Atlantic City, N. J., May 25 and 26, 1925. Twentieth Annual Conference held at Dallas, Texas, April 19 and 20, 1926. Brooklyn, N. Y. 1926. 340 pages. Cloth.

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B. R. TUCKER, M. D., Richmond, Va.
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Editorial

Adenomatous Goiter.

Practitioners may well consider carefully the early and clinical symptoms of toxic adenomatous goiter. It appears after adolescence: it is relatively rare before the age of thirty. Seventy-eight per cent, says Plummer, are in persons more than forty. Asymmetry of the thyroid suggests adenoma but it is not possible to say without careful study whether or not it is one in which hyperthyroidism has developed. But it is a matter of importance to the practitioner to know whether or not hyperthyroidism is present. It is easy to suspect toxic thyroid in patients with nodular enlargement of the gland, who show nervous symptoms and rapid heart action. But it is equally important to identify adenomatous goiter developing hyperthyroidism in those in whom these signs are not so obvious or at the time absent. Single or multiple adenoma may exist, submerged from view. Only a differentiating inquiry into the status of the thyroid by physical examination often reveals the presence of this type of thyroid enlargement. There are not a few cases in whom the nodular growth of the thyroid lies on one or both clavicles. In such an examination is revealed an enlarged thyroid-nodule which had been unknown to the patient. This sort of condition not infrequently exists in patients who seek relief from the "nervous" heart or in patients who suffer from palpitation, and tachycardia. Once identified, the adenoma of the thyroid explains the cardio-vascular symptoms which had been confusing in the matter of the etiologic factor at work. Adenoma with hyperthyroidism brings about fixed cardio-vascular symptoms of serious import and the longer that state obtains in the body, the more inexorable becomes the heart disturbances. All enlarged thyroid cases past thirty should be tested for hyperthyroidism. The basal metabolic rate should be made; a number of such tests may be required. All cases of fibrillation, with enlarged thyroid, should be subjected to the basal metabolism test. These cases may show few if any of the typical signs which one finds in exophthalmic goiter. There may be no evidence of stare, or fine tremor. These patients may present only obscure evidence of nervous tension and tenseness of expression, with an irritable heart. These patients, with adenomatous goiter and hyperthyroidism, often give a history of failure of strength, a lack of patience, a feeling of unrest and irascibility. The heart disturbs them on slightest excitations. They sleep badly. Nervousness, insomnia, palpitation, shakiness, but an increased tolerance for cold, characterizes adenomatous thyroids with hyperthyroidism.

Toxemia of Pregnancy.

When a pregnant woman shows any of the following symptoms one may say that she has toxemia: (1) Pernicious vomiting, (2) jaundice, (3) hypertension, (4) albuminuria, (5) edema, (6) severe anemia, (7) convulsions, (8) visual disturbances. These grave phenomena of pregnancy denote the presence of poison of undetermined origin for which no definite cause has been found.

In this connection Corwin and Herrick have recently called attention to the relation of "hypertensive toxemia of pregnancy" to chronic cardio-vascular diseases. They studied 165 cases and 74 per cent exhibited cardiac hypertrophy, sclerosis of the brachial or radial arteries, vascular retinal changes, or persistent hypertension after a period of from six months to six years post partum. Of fifty-two patients who had shown signs of toxemia, when first attended, fifty showed hypertension in the subsequent pregnancy. They suggest that patients who manifest this type of disturbance should be carefully observed over a period of years for evidence of cardio-vascular disease.

Keratitis in Congenital Syphilis.

Pathologically in keratitis of congenital syphilis there is a round cell infiltration in the deeper layers of the cornea; occasionally,

polymorphonuclears, epithelial cells, and giant cells. A like process is found in the ciliary body and iris. The cells in the center undergo necrosis, but rarely ulcerate. The impairment of vision through opacity depends upon the amount of this necrosis. There is quite an unanimity of opinion that there is an absence of spirochaeta pallida in the cornea in this condition. Various opinions have been expressed in explaining this pathologic change. Elsching thought it was due to toxins which reach the cornea by way of its limbus. Reis and others felt that toxins came in by the amniotic fluid and produce cell infiltration by chemotaxis. However, some have found spirochaetes in the cornea in interstitial keratitis.

It is felt that one is dealing here with a rather gummatous type as found in the third stage of syphilis and that the permanent scarring varies with the promptness and thoroughness of the treatment.

Pernicious Anemia.*

Pernicious anemia has been for a long time one of the most perplexing medical problems. Its causation, and its treatment have been subjects over which much discussion, investigation and inquiry have been carried on. Recent observers in this disease have called attention to a special form of dietary treatment. This dietary program has apparently benefited some patients suffering from pernicious anemia. Minot and Murphy have used this diet which contains a large quantity of complete proteins in the form of liver. These patients, in their hands, showed marked symptomatic improvement excepting in spinal cord symptoms. Recently, Murphy and others, have studied the changes in the composition of blood in pernicious anemia patients who have been treated by this special diet. They observed ten cases of pernicious anemia. These patients were given the original diet as described by Minot and Murphy. This consisted in a daily allowance of 120 to 240 grams, and sometimes more, of cooked calf or beef liver. Sometimes an equal amount of lamb kidney was substituted. To this was added 120 grams of beef or mutton muscle meat, 300 grams of vegetables, especially lettuce and spinach; 250 to 500 grams of fruit; 40 grams of fat, merely to make the food attractive; an egg or 240 grams of milk; dry or crusty bread, potato and cereals to make a caloric allowance of 2,000 to 3,000

The patients continued the use of this for several months and were given no medicine except 4 to 8 c.c. of diluted hydrochloric acid U. S. P. three times a day.

This diet treatment appeared to cause the formation of new, young red blood cells from the bone marrow. These appeared in the general circulation. About the same time that there was a marked reaction in bone marrow, a decrease of bile pigment concentration in the serum was noted. There was an increase of red blood cell count, hemoglobin concentration, accompanied by a progressive growth "in the blood tissue as a whole as estimated by blood volume determinations".

It is worthy of note that there was no change in the non-protein nitrogen of the plasma or plasma protein; however, there was a notable increase protein of the corpuscles, and hemoglobin concentration.

*J. A. M. A., Vol. 88, No. 16, pg. 1211.

Dr. Joseph A. White's Birthday Party.

"The withering type of Time and Care
Hath nothing, sure, to do with thee."

A notable gathering on a notable occasion, to do honor to a notable man! Such was the gathering assembled at the old Commonwealth Club in Richmond, Virginia, on April 19, 1927, the birthday of Dr. Joseph A. White.

Which birthday? See him in the ball-room you might guess twenty; on the golf course, twenty-four; in the operating room, forty-five. Choose what number you wish.

It was a wonderful sight; a great banquet hall beautifully decorated, containing more than a hundred and fifty guests, all chatting happily about the tables. The music strikes a lilting march, and down through the corridor, comes the procession; Dr. White escorted by Dr. Robert C. Bryan and Dr. Stuart Michaux; and after these, the notable guests of honor from other states and cities, who were to be the speakers of the evening. These were: Dr. George E. DeSchweinitz, former president of the American Medical Association, and of the American Ophthalmological Society; Dr. J. Wilkinson Jervey, of Greenville, S. C.; Dr. Dave T. Taylor, of Washington, N. C., former president of the Tri-State Medical Society; Dr. Thomas R. Holloway, of Philadelphia, professor of Ophthalmology of the University of Pennsylvania; Dr. Edward A. Looper, laryngologist, of Baltimore; Dr. Lewis H. Taylor, of Wilkes-Barre, Pa., and Dr. Hiram Woods, of Baltimore, former president of the American Ophthalmological Society.

Dr. White was acclaimed with a great burst of enthusiastic applause. Dr. Bryan introduced Dr. W. T. Oppenheimer as toast-master, and when the delightful repast was over Dr. Oppenheimer in his attractive and inimitable way introduced the speakers.

Not in many years have there been in Richmond so many charming and graceful speakers. There was a play of wit, wisdom and humor, with a deep throbbing under-current of affectionate esteem that made this unique occasion one long to be remembered. Following the speakers Dr. Emory Hill read selections from a great pile of letters and telegrams of distinguished specialists and friends who were unable to attend. Someone should codify these in a memory book for seldom does one see such a delicate play of wit and humor compressed in so small a space. One of these writers, who evidently knows Dr. White as intimately as his Maker, in just one sentence said all that ever need be said about him. If Dr. White ever has a tombstone and anyone else is left in the world to carve upon it, and if Dr. White doesn't stop him or change it, I know of no more appropriate sentiment epitomizing the life of this wonderful man than the words this writer used: "Panting Time toils slowly after him!"

In a speech filled with feeling, with all the little niceties of expression of deep personal regard of which only Dr. John Dunn is capable, a silver service was presented to Dr. White.

The evening closed with Dr. White's speech of acceptance in which he tried to tell his hearers of his deep appreciation of their affection and esteem. It must have been a hard speech to make. But Dr. White is noted for doing the hard things well and though deeply affected did this one splendidly.

W. L. P.

Besides the foregoing description of Dr. White's birthday party it seems appropriate to comment briefly upon the man himself. His accomplishments are worthy of note. His personality and his charm, likewise, invite a word, at least. Few men have stood out as distinguished as Dr. Joseph A. White. He has occupied in professional opinion a high place in his chosen field of ophthalmolgy. Dr. White, in 1879, established himself in Richmond as a specialist in the disease of the eye, ear, nose and throat; and his work, his successful practice, his leading positions in the medical organizations, from that time to the present, have placed him in the foremost rank of American specialists. He is known particularly, however, as an ophthalmologist the country over. He stands well with other distinguished American ophthalmologists. This was strikingly brought out at his birthday party, by the large number of telegrams and letters, which were read, from foremost ophthalmologists of distant cities. This was further attested to by the fact that busy and distinguished ophthalmologists, from Philadelphia, Baltimore, and other cities journeyed to Richmond in order that they might be present on the occasion of this birthday celebration. The praise expressed by these and other speakers, evinced the high position he occupies in the esteem of his professional fellow-workers.

As a teacher Dr. White has attained a well deserved high place. As professor of ophthalmology (and one of the founders) in the University College of Medicine, and, later, in the Medical College of Virginia, Dr. White has, since his early professional career, taught hundreds of medical students the diseases of the eye. Dr. White's "eye-clinic" has been ever a popular place with the students: all admiring the wide knowledge as well as the striking personality, of their teacher. His alert mind, his dexterous hand, his bright and apt comments, his interesting and unique personality have been the admiration and wonder of his pupils. The precision and exactness of his eye operations, likewise, challenged their interest, as well as instructed them.

Many honors have come to Dr. White through the partiality of his medical associates. Among others he has been President of the American Ophthalmological Society: President of the Tri-State Medical Association; and President of the Medical Society of Virginia; and President of the Richmond Academy of Medicine.

During the course of his long career Dr. White has done a large volume of daily routine practice, and has performed hundreds of operations upon the eye. His reputation throughout the South, brought to his offices through the years, a large number of clients from remote sections. For many years, with his assistants, he did a large practice. Many of the specialists in Richmond and other places, have served their noviciate under Dr. White. No man left his service, without feel-

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ing a strong sense of obligation to him. He was always esteemed by those who served under him. Some of his greatest admirers today are his office assistants of former years.

Dr. White possesses something besides scientific knowledge and skill. He has a certain charm of personality. In this possession he is ever striking and engaging: a personality quite unique, and, withal, most likeable. Richmond doctors, Virginia doctors, and doctors the country over, who come under the influence of his companionship, like him. He makes a friend when he meets a stranger. The warmth and cordiality of his greeting, the convivial and ingratiating influence of his manner, his quality of good fellowship for all ages, makes Dr. White known and beloved everywhere he may be. He is ever ready with a story; he is ever telling some yarn; he is ever willing to listen—but not for long.

And he is such a sport. Some men excel in one sport, and some in another, but he is a "sport" who excels in all. Some sports have their day and become "has beens", but here is a "sport" who is not a "has been" and never will be. He golfs, he dances, he rides. He fox-hunts; he gives exhibitions of horsemanship (only last year) over the jumps at public horse shows. He works, he plays, and he never tires. He goes to social functions, dances late in the night and is up bright and early next morning, seeing patients in his office. Was there ever such a man?

But one can not go on extoling Dr. White.

We have here a reproduction of a photograph of him, which we present to his many friends of the Medical Society of Virginia. His distinguished career as doctor, a teacher, a social and friendly man, has been adorned, it seems to us, by one lofty virtue worthy of mention, in conclusion of this appreciation. In this moral quality, with its fine shades of influence, may be found, at least in part, the source of his long and useful career, as well as of the winning charm of his personality!

To All, He Adds Charity.

A. G. B.

News Notes

On To Washington!

Very few Virginia doctors know much about the American Medical Association and the profession of the state is losing many of the good things that come to the doctors of other states by keeping in close contact with the National Association.

Organized medicine can do much for us if we would but avail ourselves of it.

The Association meets May 16th to 20th at our very doors, and conveniently accessible to all by rail, boat or motor.

Such an opportunity should be seized upon by every doctor of the state. He should visit the meetings of the House of Delegates, the various sections in which he is interested, and the extensive scientific exhibits.

If this is his first meeting, he will be tremendously interested and benefited to see the magnitude of the work the National organization is doing for the profession and the public, and he will return home greatly broadened in his views and determined to do his full part in developing his local society and through it the State Society, both of which are integral parts of the American Medical Association.

In the past the attendance from Virginia has been small and especially disappointing to your delegates. In Texas, California and other states the local profession took a pride in making their attendance as near 100 per cent as possible.

Let us follow suit and arrange for *every doctor* of the state to go on to Washington for a part or the whole of the meeting.

It will pay you to go.

S. L.

Virginia Doctors!

You cannot afford to miss the meeting of the American Medical Association in Washington, the middle of May. Thirty-six years have elapsed since the A. M. A. last met in Washington and so this may be an opportunity to come to us only once in a lifetime. We have good motor roads, attractive boat trips and numerous railroad facilities for getting to Washington and this occasion will be as interesting as any can be. Arrangements have been made for reduced railroad fares on the Certificate plan. Secure certificate from the ticket agent when you buy your straight ticket to Washington and have this certified at the Registration Bureau after reaching there.

A big program has been prepared, socially as well as scientifically—one that could only be staged in the Nation's capital. The President of the United States has consented to address the opening meeting and the Presi-

dent and Mrs. Coolidge will receive fellows and their wives in the South Grounds of the White House on Wednesday, May the 18th, at 12:30 P. M. There will be exhibits, alumni reunions, scientific meetings and social gatherings, as well as sight seeing and reunions with friends.

Our Society has three delegates in the House of Delegates: Dr. Southgate Leigh, Norfolk, Dr. Stuart McGuire, Richmond, and Dr. J. W. Preston, Roanoke. All three expect to attend the meeting.

Standards of Prenatal Care.

Two pamphlets published in 1926 by the U. S. Department of Labor should be read by every doctor in the State of Virginia who practices obstetrics.

In one of the pamphlets two articles appear, one entitled "The Physician's Part in a Practical State Programme of Prenatal Care" by Fred L. Adair and the other "Standards of Prenatal Care" by Robert L. DeNormandie. The other has the title "How to Make a Study of Maternal Mortality" by Robert L. DeNormandie.

The objects of these articles is to call attention to the frightful mortality among the pregnant and delivered women and to make an effort to arouse the profession to better and cleaner prenatal and obstetrical work.

Dr. Adair starts his prenatal care in the anti-conceptional and pre-embryonic times and would seem to call to our aid the pediatrists to watch over the kidneys of the girls following scarlet fever and diphtheria. He further indicates the importance of the recognition of rachitis and its importance upon the development of the pelvis.

In this article as well as in Dr. DeNormandie's, stress is laid upon a careful history both general and obstetrical.

In the standards of prenatal care it is frankly acknowledged that the plan of prenatal care is a compromise that has been arrived at because of the various views of the committee that was appointed to draw up these standards. While the standard is a good average, still one could vary rather markedly from the plan laid down without being out of the march of progress. Our own ideas would differ from the standard only in non-essential details and would hardly be important enough to mention in this review. The standard is in our opinion not too high, in fact I would rather say too low.

The essence of prenatal care is a careful history, frequent visits to the office, where urinalyses, blood pressure readings, weight, pelvimitries, foetometries and careful mapping out of presentation and position can be made.

As to how to make a study of maternal mortality, Dr. DeNormandie puts the blame for rising maternality where it rightly belongs, upon the doctor. The pity is that it had to be written at all.

Obstetrics is a very poorly paid, nerve racking affair. Often a decision as to what to do in a case comes after a night of broken rest and hard work. That might be an excuse for poor operative work, but there is really no excuse for poor prenatal work except that the patient will not co-operate.

These pamphelts may be obtained from the State Board of Health and will repay amply the trouble of writing for them. They may stimulate the man who is trying to do better work and will probably make the slovenly man mad. That might do him good too.

GREER BAUGHMAN.

Dr. Hunter H. McGuire,

Winchester, Va., recently addressed the Eastern Panhandle Medical Society, at Martinsburg, W. Va., his subject being "Incipient Cataract."

Dr. George S. Silliman,

Formerly with the U. S. Veteran's Hospital at Aspinwall, Penna., is now with the Johnston Willis Memorial Clinic at Abingdon, Va., as roentgenologist and urologist. Dr. Silliman served the Veterans' Bureau in this specialty for eighteen months and has had eight years' experience in this work in Northern hospitals.

New Hospital in South Boston, Va.

Dr. R. H. Fuller, until recently in charge of Little Retreat Hospital, at Clover, Va., has closed this place and expected to open a hospital in South Boston, Va., about May the 1st. The new hospital will be able to care for about twenty-four patients and will be known as the South Boston Hospital. Much of the equipment from the hospital at Clover has been transferred to the new place.

The National Tuberculosis Association

Will hold its annual meeting in Indianapolis, Ind., May 23-26, under the presidency of Dr. Henry Sewall, of Denver, Col. Headquarters will be at Claypool Hotel. Information about the meeting may be obtained from the headquarters of the National Tuber-

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culosis Association at 370 Seventh Avenue, New York City.

Dr. J. L. Hamner

Has returned to his home at Mannboro, Va., after a visit to West Virginia.

Summer Clinics.

The Chicago Medical Society, 25 East Washington St., Chicago, Ill., announces that it will have summer clinics this year for two courses. The first will be from June 13th through June 24th, and the second from June 27th through July 8th. Registrations will be open to all reputable physicians from any state, as far as they may be accommodated, in order of registration.

Dr. R. T. Givens,

Glen Wilton, Va., has returned home after attending the Post-Graduate Clinics held at the University of Virginia Hospital.

Dr. S. E. Hughes,

Danville, Va., has been on a visit to Asheville, N. C.

Report of Commission on Medical Education.

Any of our readers interested in the general questions of medical education and practice may obtain a copy of the "Preliminary Report of the Commission on Medical Education" without charge, by addressing the Commission on Medical Education, 215 Whitney Avenue, New Haven, Connecticut.

Dr. L. E. Cockrell,

Reedville, Va., was a recent visitor in Baltimore, having gone there on professional business.

Pavilion Opened at Blue Rigde Sanatorium.

The George W. Wright Memorial pavilion was opened at Blue Ridge Sanatorium, Charlottesville, Va., April 26th. Beds in this pavilion are intended for the use of Masons in good standing and dependent members of their families. In case all the beds are not in use by the Masons, they may be had by others desiring to enter the Sanatorium.

Medical Director at French Lick Springs Hotel.

Dr. A. H. Harold, an experienced physician of Indianapolis, has recently accepted the position as medical director at French Lick Springs Hotel, French Lick Springs, Ind., succeeding Dr. Dunning Wilson, who was killed last winter in an automobile wreck in Cuba.

Dr. Harry Sutelan,

Of the class of '24, University of Texas, Department of Medicine, has located in Norfolk, Va., for the practice of medicine. Just after graduating, Dr. Sutelan interned at St. Vincent's Hospital, Norfolk, and later at the New York Lying-In Hospital, and at Kingston Avenue Hospital for Contagious Diseases in Brooklyn, N. Y.

Dr. J. C. Cutler,

Newport News, Va., was a recent visitor in Richmond, having come up on business.

A Nursing Mother Needs Sunlight and Green Vegetables.

Experiments recently made by physicians seem to prove that if a nursing mother has plenty of direct sunlight or is treated by artificial violet rays, she will be able to give her baby what is needed to prevent rickets and also escape for herself the breaking down of the teeth which so often follows the bearing and nursing of children. Other experiments have shown that the ricket-preventing vitamin A is associated with the green color of the vegetables in which it occurs, so that the ordinary garden variety of lettuce is a far better source of energy than head lettuce.

Dr. R. T. Akers,

Alum Ridge, Va., is at home and at work again, after spending three months in the hospital for blood poisoning in his right leg.

Dr. B. C. Keister,

Washington, D. C., left the last of April for a visit to his daughter in Minneapolis, Minn. On his way West, he expected to visit some of the hospitals and post-graduate schools in Chicago. Dr. Keister planned this trip for last winter but on account of unexpected business was compelled to defer it to this time.

Dr. Raymond D. Kimbrough,

Of the class of '24, University of Virginia, Department of Medicine, has located in Charlotte, N. C., where he is connected with the Nalle Clinic, in the department of internal medicine. His offices are in the Professional Building.

Dr. William E. Warren,

Williamston, N. C., was recently elected president of the Second District Medical Society of North Carolina for 1927.

Chile Takes Important Steps for Child Health.

Chile has recently reorganized its National Health Service, instituting periodic physical examinations of all school children, to be reported on official examination blanks; a school

for instructing visiting public health nurses; and a course of training for sanitary inspectors. It has also worked out plans for a sanitary type of house which can be quickly constructed from native materials at relatively small cost.

Dr. Frank McCutchan,

An alumnus of the University of Virginia, Department of Medicine, for sometime House Surgeon at the Manhattan Eye, Ear and Throat Hospital, of New York City, has located in Roanoke, Va., where he is a member of the staff of the Gill Memorial Eye, Ear and Throat Hospital.

Dr. Tom A. Williams,

Formerly of Washington, D. C., will spend the summer in Florence, Italy, and will not return to Miami, Fla., where he is now located, until late in the Fall. He will spend the early part of June at the Royal Society's Club in London, to which correspondence should be addressed.

During his absence, the Child's Guidance Clinic, of which Dr. Williams is psychiatrist, will be directed by Dr. Agos.

The Hospital Clinical Congress of North America

Will be held June 20th to 24th, in the Milwaukee Auditorium, Milwaukee, Wis., under the auspices of the College of Hospital Administration of Marquette University.

The twelfth annual convention of the Catholic Hospital Association of the United States and Canada will be held coincident with the Hospital Clinical Congress. All communications relative to either meeting should be addressed to the College of Hospital Administration, 124 Thirteenth Street, Milwaukee, Wisconsin.

All persons engaged in any phase of modern hospital work should be interested in the clinic and exposition and sessions are open to all interested. While the clinical idea will predominate, the Congress will emphasize the most modern ideals and standards in hospital equipment, organization and planning. The department of Industrial Hospitalization will be especially important for it will demonstrate the preventive, curative and alleviative work being done by the industries and large corporations of the country. Compensation and the work of insurance companies will also be demonstrated.

Dr. and Mrs. Arthur S. Brinkley,

Richmond, returned home about the middle of April after a visit to New York.

Great Britain's New Legitmacy Act.

Until the beginning of this year no child born out of wedlock in Great Britain could be later legitimated by the marrige of the parents. On January 1, 1927, an act came into force making this possible, except in cases where either parent was married to a third person at the time the child was born. Legitimation dates only from the time the act came into force even though the marriage occurred earlier. Legitimated children are to have the same rights of inheritance as children born in wedlock, and they have the right to have their births re-registered.

Added to Teaching Staff.

The New York Polyclinic Medical School and Hospital, New York, N. Y., announces that the following names have been added to its faculty:

Dr. Frederic W. Bancroft, as Professor of Surgery;

Dr. Harold E. Santee, as Professor of Surgery;

Dr. Charlton Wallace, as Professor of Orthopedic Surgery;

Dr. Percy H. Williams, as Professor of Gynecology; and

Dr. John H. Carroll, as Professor of Internal Medicine.

The Abbott Laboratories,

North Chicago, Ill., announce that at their annual meeting held on March the 17th, the following officers were elected: President, Dr. Alfred S. Burdick; vice-presidents, E. H. Ravenscroft, Henry B. Shattuck, James W. Ranson; treasurer, C. O. Brown, secretary, S. DeWitt Clough; general counsel, Alfred W. Bays.

Dr. Alfred S. Burdick sailed on the Cedric, April 9th, for a two months trip in Europe. He is accompanied by Mrs. Burdick, Mrs. H. B. Shattuck and Mr. H. B. Shattuck, manager of the New York branch of the Abbott Laboratories. England, France, Germany, Switzerland and Italy will be visited.

Dr. and Mrs. S. E. Weymouth

Have returned to their home at Callao, Va., after a visit to Florida.

Dr. J. S. Horsley, Jr.,

Richmond, Va., attended the annual meeting of the Southern Society of Clinical Surgeons,

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which was held in Cleveland and Cincinnati, O., April 4-8, inclusive, and was elected secretary-treasurer of the Society for the coming year.

The American Gynecological Society

Will hold its annual meeting at Hot Springs, Va., May 23-25, under the presidency of Dr. Arthur H. Curtis, of Chicago. Dr. Floyd E. Keene, of Philadelphia, is secretary.

Changes in Medical Department, University of Virginia.

At the April meeting of the Board of Visitors of the University of Virginia, the following changes in the Medical Department were announced: Dr. Stephen H. Watts resigned as professor of surgery and gynecology, as he is retiring from active service; Dr. I. A. Bigger resigned as assistant professor of surgery to be on the staff of Vanderbilt University, at Nashville, Tenn.; Dr. Cuthbert Tunstall was named instructor in diseases of the ear, nose and throat; Dr. James C. Flippin was promoted from acting dean to dean of the Medical Department.

Dr. and Mrs. Wm. Edward Smith,

Farmville, Va., left the latter part of April for Boston, Mass., where Dr. Smith will take post-graduate work at the Massachusetts General Hospital, until September the 1st.

Dr. and Mrs. M. H. Watson,

Of McRoberts, Ky., have been on a visit to relatives at their former home in Chatham, Va.

Dr. and Mrs. I. Keith Briggs,

South Boston, Va., have returned from a motor trip through the Valley of Virginia where they went, with a party of friends, to witness the Apple Blossom Festival.

Hospitals to Care for Patients With Moderate Means.

The Journal of the A. M. A. states that plans have been made to raise $500,000 to build a hospital at Warwick, N. Y., to care for patients who are unable to pay for private treatment but who are unwilling to accept charity. The hospital is to have rooms costing from $17.50 to $25.00 a week.

It is stated in the same issue that the trustees of Mt. Sinai Hospital have likewise decided to make provision for private patients with moderate means who cannot afford the present price of private rooms and yet do not wish to be placed in the wards.

Dr. and Mrs. O. J. Henderson

Have returned to their home in Montgomery, W. Va., after spending the winter in San Diego, California.

Dr. Garnett Nelson,

Richmond, is much improved and has resumed his work after spending several weeks in St. Luke's Hospital.

Married.

Dr. Ryland Atwood Blakey, Fayetteville, N. C., and Miss Catherine Hagood, of Easley, S. C., April 14th.

Children Who Work Outside School Hours.

The National Child Labor Committee has recently published a study of 673 working school children under 16 years of age in certain smaller cities and towns of Missouri. One-fifth of the children worked twenty hours or more a week. Added to the required thirty hours of school work this made a working week of fifty hours of more. The forty-eight hour week is generally recognized as a standard for adults. This is not the worst of the story, for nearly 8 per cent of the 673 children worked thirty hours or more per week, and over a fourth of them worked at night.

Correspondence Course and Teaching Institutes for Nurses.

The Metropolitan Life Insurance Company has adopted the plan of keeping its visiting nurses abreast of the times by means of correspondence courses and teaching institutes. So popular has this plan proved in the three years since it was inaugurated that it promises to be far-reaching in its effects. Correspondence courses have been arranged and teaching institutes are now being held twice a year in each of the Company's nine territories. Invitations are extended the Red Cross, State Departments of Health and Visiting Nurse Associations to have representatives attend the teaching institutes.

In addition to these advantages available to staff nurses already in the employ of the company, the Metropolitan has experimented with a system for teaching nurses about to enter the company's service. A center for this work was started in Jersey City about three years ago. Here the nurses spend six weeks being taught proficiency in their new duties. So successful has this feature proven that two additional centers will be organized in New Orleans and Atlanta.

Dr. and Mrs. James M. Moser,

With a party of friends from Washington, D. C., recently visited in Tappahannock, Va.

Dr. Herbert C. Jones,

Petersburg, Va., left the last of April for New York, where he will take up post-graduate work in surgery. Before returning to his home, he will also visit the Mayo Clinic at Rochester, Minn.

Dr. and Mrs. Jeter R. Allen,

Marshall, Va., returned home the latter part of April, after a northern tour, which included visits to a number of interesting places, among which were New York, Philadelphia, Baltimore and Washington.

Dr. E. L. Sutherland,

Recently of Charlottesville, Va., has moved to Lynchburg, Va., where he will have offices at 811 Church Street. He will continue to specialize in diseases of the eye, ear, nose and throat.

The West Virginia State Medical Association

Is to hold its annual meeting at White Sulphur Springs, W. Va., June 21-23, under the presidency of Dr. Chester R. Ogden, of Clarksburg. Mr. Sterrett O. Neale, Charleston, is executive secretary.

Influenza on the Wane in Europe.

According to report given out by the League of Nations Non-Partisan Association, there is now a marked decline in deaths from influenza in Europe, where the disease has been so prevalent for the past few months. The highest point in the outbreak was reached in January and the highest death rate was reported in Geneva, Switzerland, where there were 129 influenza deaths per 100,000 inhabitants between December 5 and February 12. This figure is almost equal to Geneva's annual tuberculosis mortality rate.

There was a marked incidence of influenza, in varying degrees of intensity, during the winter season in all of the European countries. In the United States, however, there seemed no unusual prevalence of the disease.

Dr. Stuart McGuire

Has just returned to his home in Richmond from a visit to California, where he gave an address by invitation before the California Medical Association at Los Angeles.

Dr. J. A. Tyree,

Danville, Va., has been elected vice-president of the Rotary Club of that city for the ensuing year.

Petersburg Hospital to be Enlarged.

Plans are being made to enlarge the Petersburg Hospital, Petersburg, Va., to meet the needs of the surrounding country as well as the city. The committee of doctors in charge of planning for the larger hospital is composed of Dr. Wright Clarkson, chairman, and Drs. W. C. Powell, William B. McIlwaine, and George H. Reese. The annex being considered will furnish greatly enlarged facilities and will be modern in every respect.

Dr. Charles R. Robins,

Richmond, Va., has been elected vice-president of the Richmond Rotary Club for the year beginning May 1st.

Dr. John P. Munroe,

Charlotte, N. C., has been elected president of the New Charlotte Sanatorium, in that city, for the current year, and Dr. Silas R. Thompson has been elected chairman of the staff.

Dr. I. A. Bigger,

Assistant professor of surgery in the University of Virginia, Department of Medicine, recently tendered his resignation, and left the first of May for Nashville, Tenn., where he has accepted the position of associate professor of surgery in Vanderbilt University, Medical School.

The Walter Reed Medical Society

Will hold its annual meeting at Yorktown, Va., May 26th and 27th, and the usual attractive program is anticipated. Dr. J. W. C. Jones, of Newport News, is president, and Dr. L. E. Stubbs, also of Newport News, is secretary. There will be several papers by invited guests in addition to voluntary papers by members.

The Crippled Preschool Child.

The Wisconsin Association for the Disabled reports that 78 per cent of the crippled children found in its survey of Fond du Lac County were disabled before the age of seven years. This fact seems to emphasize the need for physical examination of the preschool child.

Dr. Southgate Leigh,

Norfolk, Va., delivered an address in Atlanta, last month, before the Commission on Interracial Co-operation, his talk dealing with a solution of the high death rate in the negro race.

Dr. P. L. Hill,

Of the class of '17, Medical College of Virginia, who was connected with the Mission

Hospitals in Wonsan and Choonchun, Korea, under the direction of the Southern Methodist Board of Missions, from November, 1917 to December, 1926, returned to the States the last of December and has located in Petersburg, Va., with offices at Franklin and Sycamore Streets.

On Staff of Medical College of Virginia.

Dr. Sidney S. Negus, professor of organic chemistry at the University of Richmond, has been appointed to a similar position in the Medical College of Virginia, Richmond.

The Medical Society of Virginia, Maryland and District of Columbia

Will hold its regular semi-annual meeting in Alexandria, Va., June 8, 1927, at 8 P. M. Dr. G. Bache Gill, of Washington, D. C. is president, and Dr. Joseph D. Rogers, also of Washington, corresponding secretary.

Dr. Robert P. Cooke.

Recently with the Accomac County Health Unit, has located in Lexington, Va., where he is in charge of the Rockbridge County Health Department.

Wanted.

Relief work leading to permanent location in Virginia, West Virginia or Kentucky. Twenty-three years' practice, fifteen in industrial work. Will consider any good location. Best of health and recommendations. Small family. Available immediately. Can make a small investment but prefer place with much work and proper compensation for my efforts. Address answer to "No. 50", care this journal. (*Adv.*)

Wanted.

We have several well-trained practical laboratory technicians graduating from our school of public health May 15. Physicians, hospitals and health departments desiring such service can secure it by writing immediately; first come, first served. Address Dr. L. H. South, State Bacteriologist, 532 West Main Street, Louisville, Ky. (*Adv.*)

Obituary

Dr. Harry M. Tayloe,

Of Hague, Va., died at his home in that place, April 21st, after a short illness with pneumonia. Dr. Tayloe was born in Fauquier County, Virginia, fifty years ago and received his early education at Bethel Military Academy. Upon completion of his studies there, he entered the Medical Department of George Washington University, Washington, D. C., and took his diploma in medicine from that school in 1908. He had been a member of the Medical Society of Virginia since 1909.

Dr. McMinn M. Pearson,

For nearly a quarter of a century a member of the Medical Society of Virginia, died at his home in Bristol, Va.-Tenn., April 9th, death being due to angina pectoris. Dr. Pearson was a native of Tennessee and sixty-three years of age. He graduated from the Hospital College of Medicine, Louisville, Ky., in 1889. Dr. Pearson was at one time an associate editor of the former *Virginia Medical Semi-Monthly* and was for a term one of the councilors from the State-at-large in the Medical Society of Virginia.

Dr. John E. Mapp,

Retired physician of Keller, Va., died at his home in that place on April 30th, after an illness which extended over several months. He was eighty years of age and had graduated from the College of Physicians and Surgeons, Baltimore, in 1868. He then located in Accomac County, Virginia, where he practiced continuously for about fifty years. He was an honorary member of the Accomac County Medical Society and took an active part in the civic enterprises of his county.

Dr. Samuel Westray Battle,

Prominent physician of Asheville, N. C., died in a hospital in Raleigh, N. C., April 29th. He suffered a stroke of paralysis and never regained consciousness. He was educated at the University of Virginia and later at University and Bellevue Hospital Medical College, New York, graduating from the latter in 1875. Dr. Battle served for twenty years with the North Carolina National Guard, and retired several years ago with the rank of brigadier general. His widow and three children survive him.

Mrs. Elizabeth Potts Ryder,

Wife of Dr. O. A. Ryder, of Alexandria, Va., died April the 14th, after a short illness. Mrs. Ryder was an alumnus of Randolph-Macon Woman's College and a daughter of Dr. R. H. Potts, prominent Methodist minister in Virginia. Her husband and two young children survive her.